SEXUAL ATTITUDES AND BEHAVIOR AS A
FUNCTION OF RELIGIOSITY IN THE
APPALACHIAN COLLEGE STUDENT

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Abstract of Thesis

The purpose of the present study was to determine the existing relationships among religious attitudes and behavior and sexual attitudes and behavior in Appalachian college students. Three-hundred forty-five university students were given a questionnaire designed to tap these attitudes and behaviors. Two-hundred thirteen of the students were from Appalachian Kentucky, and 132 were from the Urban areas of Kentucky. The Urban students were used as a comparison group. The results indicated that there were no significant differences in terms of religious attitudes and behavior and sexual attitudes and behavior between the Appalachian and Urban students. It was also found that Appalachian students were not significantly more likely to hold a double-standard than Urban students.

Two possible explanations were proposed for the lack of differences between the Appalachian and Urban groups. First, it may be that Appalachian college students are not representative of the total Appalachian population, and/or it may be that Appalachia has actually changed in the past few years due to the advent of industry and other

change mechanisms.

When both the Appalachian and Urban groups were analyzed together, it was found that there were significant differences between males and females in terms of religious attitudes, religious behavior, and sexual attitudes. There were no differences according to sex with regard to actual sexual behavior. These findings were explained in terms of traditional sex-role orientation and modelling.

The total sample was also analyzed for differences which could be attributed to age, major, and fraternity or sorority membership. No differences were found.

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SEXUAL ATTITUDES AND BEHAVIOR AS A FUNCTION OF RELIGIOSITY IN THE APPALACHIAN COLLEGE STUDENT

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INTRODUCTION

The publication of Kinsey's (1948) Sexual behavior in the human male led many researchers to study the area of human sexuality (Ehrmann, 1959; Grummon & Barclay, 1971; Kirkendall, 1966; Masters & Johnson, 1966, 1970a, 1970b, 1976; Reiss, 1960, 1967, 1976; Robbins & Robbins, 1970; Robinson, 1976). It seems that the acceptance of Kinsey's ideas by the American public encouraged these researchers to focus their attentions on this area (Reiss, 1967, p. 4). Since that time the gamut of published material has ranged from philosophical treatises on the morality, consequences, and implications of such open sexuality (Grummon & Barclay, 1971) to actual investigations of the anatomy and physiology of the sexual response (Masters & Johnson, 1966). Virtually every aspect of human sexuality has been studied in some manner.

One focus of the research has centered on premarital sexuality, and this interest has risen greatly since the early 1960's (Reiss, 1971, p. 195). One reason for this greater interest is the impact of the feminist movement. It appears that, for many women, premarital sexual behavior is no longer governed by economic necessity nor by antisexual taboos or fear. The emancipation of women has, in many instances, made a difference in premarital relations because women are free to choose how they behave. Young people's motivation is not so much economic, social, and fearful, but involves much more of a choice (Callahan, 1971, p. 219). Reiss (1971, p. 195) suggests that

this choice has become a legitimate one, as much a young person's right as the choosing of a political party or religion. The courtship system is autonomous and unchaperoned, and young people choose what their behavior will be on a date. As a result, many people have chosen to engage in sexual activity before marriage.

These studies suggest that attitudes toward, and behavior concerning premarital sexual activity have changed. Other studies, however, suggest that some young people's attitudes and behavior have not changed. Some research indicates that young people have not become more liberal in their views (Alston, 1974; Cardwell, 1969; Ehrmann, 1959; King, Abernathy, Robinson, & Balswick, 1976; Kinsey, 1948, 1953; Middendorp, Brinkman, & Koomen, 1970; Reiss, 1967; Schulz, Bohrnstedt, Borgatta, & Evans, 1977; Sutker, Sutker, & Kilpatrick, 1970). The question therefore becomes one of increasing complexity. If attitudes and behavior are changing toward liberality in sexual matters, what are the factors in an individual's life that are related to his/her degree of acceptance of that liberality?

Many variables have been investigated with regard to this question. The sex of the participant, age, level of education, socioeconomic status, place of residence, and religion are a few of the variables that have been linked to attitudes toward and behavior concerning sexual activity (Thomas, L., 1973). Religious beliefs, religious behavior, or both are apparently recurrring variables which usually, but not always, show an inverse relationship to liberal attitudes and behavior concerning this activity (Heltsley, 1968;

Ruppel, 1970). The present study was concerned with the relationship of religious attitudes and behavior with sexual attitudes and behavior, and was partially based on Reiss' (1967) theoretical model.

Reiss' Theory of Premarital Sexual Permissiveness

Before engaging in a comprehensive discussion of the literature regarding premarital sexual permissiveness and religiosity, it is appropriate to outline Reiss' (1967) theory of premarital sexual permissiveness. Although there are several models or theories of premarital sexual permissiveness (Christensen, 1960, 1969, 1970; Hardy, 1964), Reiss' is perhaps the most comprehensive and is based on a large amount of data collected from high school students, college students, and adults. Several of the studies to be discussed later have tested or have been founded in Reiss' general theory and/or specific propositions, and thus, it is appropriate to summarize them.

Reiss' theory, which is based upon and concerns the interaction between premarital sexual permissiveness and various sociological and cultural factors, consists of seven specific propositions and a final summary statement. Proposition One states that "the lower the traditional level of sexual permissiveness in a group, the greater the likelihood that social forces will alter individual levels of sexual permissiveness" (p. 160). Thus, groups that have high levels of premarital sexual permissiveness, such as black males and the lower social classes, are the least sensitive to various social forces which affect permissiveness such as church attendance and religious attitudes.

Proposition Two states that "the stronger the amount of general

liberality in a group, the greater the likelihood that social forces will maintain high levels of sexual permissiveness" (p. 161). Consequently, the young, well-educated, upper class person, who is traditionally considered more liberal, can be expected and has been found to report higher levels of premarital sexual permissiveness. Reiss explains this by stating that "a high degree of general liberalism...not only creates an atmosphere where an individual will find sharp differences regarding sexual permissiveness among liberals and conservatives, but that it also creates a general receptivity to social attitudes...that maintain high levels of sexual permissiveness" (p. 161).

Proposition Three states that "to the extent individual ties to the marital and family institutions differ, individuals will tend to display a different type of sensitivity of permissiveness to social forces" (p. 161). This differs from Proposition One in that it refers only to the relationship between permissiveness and different social forces and says nothing about the strength of the relationship. An example would be that of the male-female differences found in relation to courtship-role differences.

Proposition Four states that "the higher the overall level of permissiveness in a group, the greater the extent of equalitarianism within the abstinence and double-standard classifications" (p. 161). In other words, the more permissive groups such as low church-attenders, are more likely to have an equalitarian standard of sexual behavior. If the behavior is considered appropriate for males, then it is likewise

considered appropriate for females. Low permissive groups, however, are more likely to employ a double-standard.

Proposition Five states that "differences in the potential for permissiveness in one's basic set of parentally derived values is a key determinant of the number, rate and direction of changes in one's premarital sexual standards and behavior" (p. 162). Reiss suggests that parents' values are instilled in their children, and highly permissive children are usually the progeny of highly permissive parents. The same relationship exists between low permissive children and their parents.

Proposition Six states that "there is a general tendency for the individual to perceive his parents' permissiveness as a low point on a permissive continuum and his peers' permissiveness as a high point, and to place himself closer to his peers, particularly to those he regards as his close friends" (p. 163). Reiss proposes that children tend to perceive their sexual attitudes as being more permissive than the attitudes of their parents, and the extent of the difference is dependent upon their close friends' attitudes.

Proposition Seven states that "the greater the responsibility for other family members and/or the less the courtship participation, the greater the likelihood that the individual will be low on permissiveness" (p. 163). For example, older siblings are generally lower on permissiveness than are younger siblings due to the responsibility the older sibling takes on.

Reiss has summarized his propositions into a concise statement of

theory:

> The degree of acceptable premarital sexual permissiveness in a courtship group varies directly with the degree of autonomy of the courtship group and with the degree of acceptable premarital sexual permissiveness in the social and cultural setting outside the group (p. 167).

Reiss uses autonomy to refer to the degree to which a courtship group is not chaperoned. It would appear then, according to Reiss, that as the ability to govern one's behavior increases, liberality in sexual attitudes also increases. This is, however, also dependent upon the culture's acceptable level of premarital sexual permissiveness.

Reiss' theory encompasses many facets of premarital sexuality, and it is feasible to assume that all of his specific propositions have been tested. In the case of the present study, Propositions One, Two, and Four are the most applicable, and hence may be discussed again at a later time. With Reiss' theory in mind, it would be well to examine other literature in the area of premarital sexuality and religiosity.

Comparisons with Two Variables

Some researchers have chosen to isolate only one religious and one sexual variable and to examine them in conjunction with one another. Middendorp et. al. (1970) studied attitudes toward premarital sexual permissiveness with a random sample in the Netherlands. The purpose of the study was to test Reiss' (1967) hypothesis that among persons whose general life style is conservative, there is a negative relationship between social class and premarital sexual permissiveness whereas for persons whose general life style is liberal, the relationship is positive. Reiss' theory was not supported. Two

determinants of permissiveness were isolated, however. Religion was the strongest determinant, and age was the other significant determinant. The more religious people, and older people reported themselves to be less permissive.

Clouse (1973) studied the attitudes of college students toward premarital sexual behavior as a function of their religiosity on a liberalism-conservatism scale. She found that in response to the statement "Premarital sex is not wrong as long as both people are willing", males, political liberals, and religious liberals agreed much more readily than did females, political conservatives, and religious conservatives. Religion was concluded to be the most important factor, although sex was also significant.

Alston (1974) studied the attitudes of white Protestants and Catholics toward nonmarital sex. The specific question designed to tap attitudes toward premarital sexual behavior was answered in relation to different situations: 1) when the partners did not intend to marry, and 2) when the partners were engaged to be married. Alston found that men tended to disapprove of both instances less than women. All of the sample disapproved least of premarital sexual behavior between engaged couples. Protestant men were more likely to disapprove than were Catholic men. Protestant women and Catholic women were virtually the same with Catholic women disapproving slightly more.

Other researchers have studied the relationship between premarital sexual behavior and religious behavior as measured by church attendance. Burgess and Wallin (1953) found that couples who attend church more

frequently had premarital intercourse less often than those who attended church less frequently. Kanin and Howard (1958) studied the effects of premarital sexual experience on postmarital sexual adjustments. They obtained information on church attendance. Their findings concerning the relationship between premarital sexual experience and church attendance were significant. Pairs in which neither spouse reported regular church attendance at the time of marriage were more apt to report incidences of sexual intercourse before marriage. Premarital experience was indicated by 28.2% of the 85 pairs of regular church goers, by 47.7% of the 44 pairs of one regular and one non-regular attender, and by 61% of the 48 non-attending pairs.

Ehrmann (1959) reported that in his sample of over 1000 college students "the number of virgins among the males who went to church regularly was almost four times as large as among males who went to church irregularly, 63% as compared to 17%" (p. 93). For females he also found that irregularity of church attendance was associated with a higher incidence of advanced sexual activity.

Segal (1974) studied the relationship between premarital sexual activity and religious practices of Jewish female college students. Utilizing a questionnaire, it was found that significant differences as to the incidence of premarital sexual intercourse were apparent when traditional synagogue affiliation, positive belief in God, positive devotion to Judaism, and attendance at religious services were considered as variables. The relationship was negative. Lena

Thomas (1973) found a negative relationship between premarital sexual activity and the amount of church attendance before age 16 in a sample of university students. This relationship was also found when amount of church attendance at the time of the survey was analyzed.

At least one study has examined premarital sexual behavior as a function of religious attitudes. Schulz et. al. (1977) studied the relationship between premarital sexual behavior and conventional religious attitudes among college students. The hypothesis was that those students entering college with conventional religious beliefs would be less likely than others to engage in premarital sexual activity. A longitudinal design was used. The results indicated that conventional religiosity showed a fairly strong and consistent simple correlation with premarital sexual behavior: the students entering college with the most conventionally religious values were least likely to engage in premarital sexual intercourse. Studying the relationship between sexual attitudes and religious behavior, Dedman (1959) found that out of 763 male freshmen in her sample of a Southern university, approximately two-thirds of those who went to church at least once a week considered premarital sexual relations never justified for both men and women, while only one-third of those who went to church at least once a week were not of that opinion.

The above studies indicate that any combination of one religious variable and one sexual variable, when compared, will produce a negative relationship between the two. The more religious one is, whether in terms of attitudes or behavior, the less likely he/she is

to have liberal attitudes or to engage in premarital sexual activity. Some of the studies also found sex and age differences with males and younger people being more liberal than females and older people.

Comparisons with Three Variables

Other researchers have combined three variables in studies of premarital sexuality. Reiss (1967), in the study discussed earlier, examined the relationships among sexual attitudes and religious attitudes and behavior. He concluded that more liberal attitudes on sexual permissiveness were inversely related to conservative religious attitudes and high amounts of church attendance. There was also a sex difference, with females being affected by these variables more than males. Wright and Cox (1967) showed the relationships among sexual attitudes and religious attitudes and behavior in a sample of English adolescents. Both males and females who endorsed high religious beliefs and practices reported premarital sexual intercourse to be always wrong.

Cardwell (1969) also used these three variables and found that, in his sample of 187 college students, each of his religious subscales, i.e. ritualistic behavior, religious self-definition, knowledge, belief, and effects were correlated with conservative sexual permissiveness attitudes. Mol (1970) also studied the relationships among sexual attitudes and religious attitudes and practices. His sample consisted of Australian adults and young adults. He concluded that the more highly religious in terms of beliefs and practices were less likely to approve of premarital intercourse.

Some researchers, when comparing three variables associated with premarital sexuality, have used only one index of religion while utilizing two indices of premarital sexuality. Lindenfeld (1960) used the importance of the religious group as a predicting variable for both sexual attitudes and behavior. In Lindenfeld's sample of college students, he reported that the students displaying higher religiosity were more restrictive in both their attitudes toward and behavior concerning premarital sexual activity.

King et. al. (1976) used degree of religious fundamentalism as a predicting variable for sexual attitudes and practices in a sample of college students. They observed a significant inverse relationship between religious fundamentalism and premarital sexual attitudes, but found no relationship between degree of fundamentalism and actual sexual practices. This finding appears to be contrary to other findings in the area. King et. al. explain their findings in terms of the methods used to assess attitudes and behavior regarding sexuality and religiosity. Their attitude scale was significantly related to premarital sexual attitudes, but not behavior. It was suggested that researchers make use of both attitude and behavior scales for each of the variables studied, i.e. sexual and religious.

These studies have examined the relationships among sexual attitudes and religious attitudes and behavior or the relationships among sexual attitudes and behavior and religious attitudes. With one exception (King et. al., 1976), these studies suggested an inverse relationship between sexual permissiveness and religious conservatism.

Reiss (1967) also found differences attributable to sex with males being less sexually bound by religious attitudes and behavior than were females.

Comparisons with Four Variables

Several researchers have utilized the method described by King et. al. (1976). Kinsey (1948, 1953), in one of the many facets of his research on the human male and female, studied the relationships among premarital sexual attitudes and behavior and religious attitudes and behavior. His findings indicated that those individuals who were more devout and more active in the church reported lower incidence of premarital sexual intercourse. The negative relationship was more apparent for females than for males.

Sutker et. al. (1970) conducted a study to investigate the influence of religious affiliation and religiosity upon premarital sexual attitudes and behavior in Southern universities. Their results indicated that college men were more sexually liberal than college women regardless of religious preference or religiosity, that sexual liberality decreased with increased frequency of church attendance, and that in general non-believers reported more liberal sexual attitudes and behavior than did the religious constituency of the sample. D. R. Thomas (1975) studied the relationships among premarital sexual attitudes and behavior and conservatism. Both religious affiliation and frequency of church attendance were reported. The results indicated that sexual experiences were consistently related to low conservatism, favorable attitudes toward premarital sexual behavior, low church

attendance, and lack of religious affiliation.

In accordance with all of the studies previously mentioned, the above studies which considered all four variables showed the same type of relationship between premarital sexuality and religiosity. Again, sex differences were apparent. There are, however, some studies which report findings inconsistent with these.

Contradictory Evidence

Heltsley (1968), in testing Reiss' (1967) hypothesis that the lower the level of sexual permissiveness the greater the likelihood that religiosity would alter the level of permissiveness, found that the hypothesis was not supported. Further interpretation of the results led the researcher to conclude that if religious groups teach abstinence, then low permissiveness results, but if it is not taught, greater permissiveness results.

Ruppel (1970) reexamined Proposition One in Reiss' (1967) theory of premarital sexual permissiveness. The data were obtained from a random sample of college students. When religiosity was measured by Faulkner and DeJong's 5-D Scale of Religiosity, and the Reiss scale was used to measure permissiveness, the expected stronger relationship between religiosity and permissiveness in groups with traditions of low sexual permissiveness than in groups with traditions of high sexual permissiveness was not observed. It was suggested that Reiss' measure of religiosity, i.e. frequency of church attendance and devoutness, taps only the ritual dimension of a multi-dimensional concept and thus may provide an inaccurate measure of religiosity.

Martin and Westbrook (1973) studied the relationships among sexual attitudes and behavior and religious attitudes and behavior in an Australian sample of university students. They found that attitudes and behavior toward premarital sexual behavior were significantly related to both church attendance and belief in God. However, in contrast to the other studies mentioned previously, the correlation was positive.

Problems in Survey Research

All of the previously mentioned studies have examined the relationships among sexual attitudes and behavior and religious attitudes and behavior. The majority of the studies have shown a negative relationship among the variables, but as with most fields of research, several studies have either shown no relationship or a positive one. Some of this discrepancy may be explained by assuming that the presence or absence of religiosity can only account for part of the resulting sexual attitudes and behavior in an individual's life. There are, however, actual problems in survey research which may help to explain the discrepancies more fully.

One of the major problems of survey research is response rate. If at least fifty percent of the raw data is not received from the participants, then it is almost impossible to use the data to make any valid conclusions about the population from which the sample was taken. There is also the possibility that response bias was present. For example, females may have been more likely to respond than males, or older people may have been more likely to respond than younger people.

These things need to be monitored carefully in order that the results may, if desired, be generalizable to an entire population (Lin, 1976, pp. 241-242).

Another very important set of problems falls under the heading of self-report biases. Perhaps the most important of these is social desirability. In cases where the participant may have attitudes and/or behaviors which are inconsistent with society's mores, he/she may not report his/her true feelings, but may answer in a more socially desirable fashion. For example, if it is perceived as more socially acceptable for a female to have not engaged in a premarital sexual relationship, she may answer the questionnaire in a manner that would indicate abstinence, whether or not that is really the case (Crano & Brewer, 1973, p. 256).

Sometimes there is also the problem of language comprehension. If the questionnaire contains items that are not understood by the participant, it may be impossible for the participant to answer the questions truthfully. This may be especially prevalent in mail questionnaires in which the investigator is not present to answer any questions about definitions of terms and the meaning of instructions (Crano & Brewer, 1973, p. 257).

The other two problems which fall into the self-report bias category are: 1) extreme response sets, and 2) acquiescence. An extreme response set is the tendency of a participant to employ the extreme ends of an attitude scale for his/her answers. Everything on the scale is an all-or-none proposition. However, this problem tends

not to affect the validity of the scale to any great degree. Acquiescence refers to the tendency of the participant to agree with positively worded statements rather than the actual content of the statement. Again, the effect of this type of answer tends not to affect the validity of the scale to any great degree, and this type of response can be easily controlled by using attitude scales which employ both positively and negatively-worded statements (Crano & Brewer, 1973, p. 257).

The last problem that will be mentioned with regard to survey research is that of a lack of dynamics. This problem would appear to exist even when every other problem has been eliminated. A lack of dynamics refers to the concept that survey research gives only a "frozen slice of reality" (Lin, 1976, p. 243). When a survey is conducted through the use of a questionnaire, only a single point in time is captured. This usually provides little or no information concerning how the participants came to feel the way they do or how they will change in the future (Lin, 1976, p. 243).

A word should be said about how these problems were managed in the present study. The problem of response rate will be discussed later, but social desirability, language comprehension, extreme response sets, acquiescence, and lack of dynamics will be mentioned at the present time. Social desirability could not be predicted or monitored to any great degree in the present study. The participants were asked to answer the questionnaire candidly, and could have done so because almost all possible precautions were taken to ensure their privacy.

However, it would be impossible to be certain that all answers were given truthfully. This is the case with any self-report data, and it must be taken into consideration when interpreting and generalizing results.

The problem of language comprehension was avoided as much as possible by wording the questionnaire simply and by attempting to make the instructions understandable. Also, all participants were asked to call the investigator if they had questions. Extreme response set, like social desirablility, was almost impossible to control in any way due to the nature of the sexual attitude scale employed. It was quite feasible and valid to have participants answer with an extreme response set.

Acquiescence was not a problem with which to be dealt with regard to the sexual attitude scale, but it was easily dealt with in the religious attitude scale. The answers were arranged such that some were positive and some were negative, and it would be difficult to agree with a question without first thinking about it. Finally, a lack of dynamics in mail questionnaire research is an unavoidable problem for which there is no truly acceptable solution. It is necessary, however, to recognize the limiting factor that this problem presents in terms of generalizability across time.

These problems in survey research can affect the outcome and validity of social psychological research, and therefore must be acknowledged and dealt with accordingly. However, when dealing with premarital sexuality and religiosity, there are many personal and/or

environmental variables which can also affect the outcome of a study.

Other Contributing Factors

Several contributing factors have been studied with regard to premarital sexuality and religiosity, and they are especially useful when utilizing a college population. These are: 1) sex, 2) sexual standard, i.e. double or equalitarian, 3) age, 4) place of residence, 5) college major, 6) membership in a fraternity or sorority, 7) place of residence while in college, i.e. on-campus or off-campus without parents, and 8) sexual preference, i.e. heterosexual, homosexual, bisexual, or asexual. A brief review of these factors follows.

Sex differences appear to be the greatest contributing factor of the variables previously mentioned. Most studies report finding that males are more permissive in their attitudes with regard to premarital sexuality than females (Alston, 1974; Clouse, 1973; Kinsey, 1947, 1953; Middendorp et. al. 1970; Mol, 1970; Reiss, 1967; Sutker et. al. 1970; Wright & Cox, 1967). Ruppel (1970), however, found no differences in the attitudes of males and females. In fact, males seemed to have more conservative attitudes toward premarital sexual activity than females. Ruppel gives no explanation for this finding. Lena Thomas (1973), in her study, found that with regard to actual behavior, no sex differences were apparent.

The observed sex differences seem to be regarded as one of the results of the double-standard, i.e. men have more sexual privileges than do women. Four of the studies mentioned the concept of the double-standard (Lindenfeld, 1960; Reiss, 1967; Sutker et. al. 1970; Thomas, D. R., 1975).

Age differences have also been found. In Mol's (1970) study, he found that when sex and amount of religious belief were held constant and age was divided into two groups, i.e. below age 40 and age 40 and above, the younger people were more liberal. Middendorp et. al. (1970) reported this difference in their sample of the total population. Ruppel (1970), Segal (1974), and Lena Thomas (1973), in their college samples, found that as the participants grew older they were more liberal in their attitudes toward premarital sex. Wright and Cox (1967), in their sample of English high school students, observed no age differences in attitudes toward premarital sexual behavior. It appears, then, that as one reaches college and grows older throughout the college years, there is a more liberal attitude toward premarital sex. However, as one gets closer to middle age, the trend is in a more conservative direction.

Some researchers have considered place of residence as a variable. All but one researcher (Middendorp et. al. 1970) found no differences between rural or urban residents (Hohman & Schaffner, 1947; Ruppel, 1970; Segal, 1974). Although place of residence has not appeared to be a strong contributing factor in the studies cited, it is felt that in the case of the present study, this may not hold true. Appalachian students have been chosen as the quasi-experimental group for this study, and it would appear that since their culture is very different from other more socialized cultures that differences might be found that in other groups are not apparent. Although Appalachia is not a totally homogenous group (Weller, 1965) in terms of social class,

there are similarities that pervade the entire culture. Their religion is, for the most part, very primitive and demanding, and this may lead to differences in attitudes toward premarital sexuality and to differences in sexual behavior. Unfortunately, some people who now live in Appalachia and would be defined as residents of Appalachia are not true Appalachians in that they have not lived there for their entire lives. This may make the sample non-representative of Appalachia, and therefore the results may not be consistent with what might be expected for an Appalachian population.

Three variables that have been considered in regard to college students are major, membership in a fraternity or sorority, and place of residence while in college. In two studies that considered the effect of major, no significant differences were found (Segal, 1974; Thomas, L., 1973). With regard to fraternity/sorority membership, Schulz et. al. (1977) found that fraternity members were 12% more likely to engage in sexual relationships while membership in a sorority had no effect. Segal (1974) found a negative relationship between sexual behavior and membership in a sorority. Neither of these researchers gives an explanation for the findings regarding sorority membership. Place of residence while in college has been reported by Schulz et. al. (1977) to be directly related to premarital sexual behavior. If there were no long-term relationships involved, off-campus residence influenced the amount of sexual behavior in a positive manner.

Due to the diversity of the present sample, another variable must

be taken into consideration. That variable is sexual preference. Some authors report that homosexuals are more liberal in their sexual attitudes and religious attitudes than heterosexuals (Glover, 1958, p. 175) while others state that many homosexuals are religiously conservative (Boyd, 1974, p. 184).

Statement of Purpose and Hypotheses

The purpose of the present study was to determine the existing relationships among sexual attitudes and behavior and religious attitudes and behavior in Appalachian college students. Specifically stated, the hypotheses are:

1) There are relationships among religious attitudes, religious behavior, sexual attitudes, and sexual behavior.

   a) Religious attitudes will predict sexual attitudes more readily than religious attitudes will predict sexual behavior.

   b) Religious behavior will predict sexual behavior more readily than religious behavior will predict sexual attitudes.

   c) Sexual attitudes will predict sexual behavior, but sexual attitudes' ability to predict will lessen when the effects of religious attitudes and behavior are controlled.

2) Appalachian college students will differ significantly from Urban students in terms of religious attitudes and behavior and sexual attitudes and behavior.

3) The contributing factors of sex, double-standard, age, major, fraternity or sorority membership, college residence, and sexual preference will act in the following ways:

   a) Sex differences will be found with males being more liberal than females, even when controlling for religious attitudes and behavior, and Appalachia.

b) The double-standard will be present, and will be more prevalent in the Appalachian group.

c) Sexual tolerance, in terms of both attitudes and behavior, will increase with age, even when controlled for religious attitudes, religious behavior, Appalachia, and sex.

d) No significant differences will be seen with regard to religious attitudes, religious behavior, sexual attitudes, and sexual behavior among students in the six different schools within the University.

e) There will be significant differences in terms of religious attitudes, religious behavior, sexual attitudes, and sexual behavior between males who are members of a fraternity and those who are not.

f) There will be no significant differences in terms of religious attitudes, religious behavior, sexual attitudes, and sexual behavior between females who are members of a sorority and those who are not.

g) Students who live off-campus without their parents will have more liberal sexual attitudes and will engage in premarital sexual activity to a greater extent than will students who live on-campus.

h) Students with sexual preferences other than heterosexual will be more liberal in their attitudes and behavior concerning religiosity and sexuality than will heterosexuals.

Utilizing Reiss' (1967) Sexual Permissiveness scale and Feagin's (1964) Intrinsic/Extrinsic Religion scale, attitudes toward premarital sexuality and religion were obtained. Measures of behavior were also taken based on questions designed by the investigator.

METHOD

Subjects

Participants were chosen from the undergraduate population at Morehead State University. The total undergraduate population of approximately 4,000 was reduced to a total of 2,139 possible participants based on the criteria shown in Table 1. The justifications for the chosen sample characteristics are also shown.

The final population of 2,139 was divided into an Appalachian quasi-experimental group and a non-Appalachian Urban comparison group. The Appalachian group had a total of 1,832 possible participants while the Urban group had a total of 307 possible participants.

In order to obtain a sample from the Appalachian population, 15.0% of the 1,832 possible participants was deemed an acceptable figure for the sample size. This included 275 participants and approximated Lin's (1976, p. 446) criteria for an acceptable sample size based on the size of the population. Lin suggests when sampling a very heterogeneous population of 2,000, 322 participants are needed before the results can be generalized to the entire population with 95.0% confidence that the results are valid for that population.

The Appalachian population was then stratified on the bases of academic classification and school within the University. This was done in order to have proportionate numbers of 1) participants in each academic class, and 2) participants in each school within the University. In order to obtain the stratifications, the number of people in each

Table 1

Criteria and Justifications
for Participant Selection

Criteria	Justifications
Undergraduate	Less likely to be married
Full-time student	Generally easier to contact due to in-town residence
White	Provided ability to maintain similarity between two sample groups
18 to 25 years old	Below 18 needed parental consent; above 25 more likely to be married
Unmarried	Primary interest was premarital sexuality
Resident of Kentucky	
Appalachian county[a]	Quasi-experimental group
Urban county[b]	Comparison group
Telephone in college place of residence	Provided ability to contact participants
Enrolled	People who had withdrawn from school since the beginning of the semester did not meet the other criteria

[a] Forty-nine counties in the state of Kentucky have been defined as Appalachian by the Appalachian Regional Commission (see Appendix C).

[b] Urban counties must have had a larger population than the largest Appalachian county and must have had one city with more than 25,000 people (see Appendix C).

academic class in each school was ascertained.[1]

A contingency table was then constructed for school by academic classification and 15.0% of the total Appalachian population of 1832 was set for the row totals and the column totals. Expected frequencies were calculated for each category, and the frequencies were divided between males and females, with females always being used to fill uneven categories because females made up 55.0% of the total Appalachian population while males made up only 45.0%. Table 2 shows the expected frequencies for the Appalachian group, and it also shows the actual observed frequencies for that group.

An attempt was made to match the Urban group with the Appalachian group, and therefore the same sample size, i.e. 275, was chosen for the Urban group. As a result the same contingency table was used for the Urban group. Table 3 shows the observed frequencies for the Urban group. Although it was considered necessary to match the two groups in terms of academic classification, school within the University, and sex, it was realized that complete matching would be impossible due to the small population size of the Urban group, and therefore some generalizability may be lost.

After determining that 550 participants were needed for the total sample, i.e. 275 participants for both the Appalachian and Urban groups, participants were randomly selected to fill each category by choosing

[1] All information about participants was obtained from the Data Processing Department on a computer listing of students by academic classification, school within the University, and sex.

Table 2

Expected and Observed Frequencies for Participants in the Appalachian Group

	Freshmen		Sophomore		Junior		Senior		Total	
	E	O	E	O	E	O	E	O	E	O
Undeclared										
Males	3	1	2	1	2	2	2	0	9	4
Females	3	4	3	2	2	2	2	1	10	9
Total	6	5	5	3	4	4	4	1	19	13
Applied Science										
Males	12	11	8	5	7	1	8	8	35	25
Females	12	10	9	9	8	4	8	4	37	27
Total	24	21	17	14	15	5	16	12	72	52
Business										
Males	8	4	6	6	5	6	5	4	24	20
Females	8	9	6	4	5	6	6	9	25	28
Total	16	13	12	10	10	12	11	13	49	48
Education										
Males	8	1	6	2	5	1	5	3	24	7
Females	8	4	6	6	5	5	6	4	25	19
Total	16	5	12	8	10	6	11	7	49	26
Humanities										
Males	5	2	4	2	3	3	3	3	15	10
Females	6	3	4	1	4	2	4	2	18	8
Total	11	5	8	3	7	5	7	5	33	18
Science/Math										
Males	4	3	3	3	3	4	3	1	13	11
Females	5	7	4	4	3	4	3	3	15	18
Total	9	10	7	7	6	8	6	4	28	29
Social Sciences										
Males	4	5	3	1	2	1	3	4	12	11
Females	4	2	3	5	3	4	3	5	13	16
Total	8	7	6	6	5	5	6	9	25	27
Grand Total										
Males	44	27	32	20	27	17	29	23	132	87
Females	46	39	35	31	30	28	32	28	143	126
Total	90	66	67	51	57	45	61	51	275	213

Note. E and O refer to expected and observed frequencies, respectively.
Note. Discrepancies between expected and observed frequencies are due to participants stating a school when they were listed as undeclared.

Table 3

Expected and Observed Frequencies for Participants in the Urban Group

	Freshman		Sophomore		Junior		Senior		Total	
	E	O	E	O	E	O	E	O	E	O
Undeclared										
Males	3	1	2	2	2	1	2	0	9	4
Females	3	3	3	1	2	1	2	1	10	6
Total	6	4	5	3	4	2	4	1	19	10
Applied Science										
Males	12	7	8	2	7	4	8	1	35	14
Females	12	4	9	4	8	9	8	3	37	20
Total	24	11	17	6	15	13	16	4	72	34
Business										
Males	8	4	6	0	5	2	5	2	24	8
Females	8	2	6	3	5	2	6	7	25	14
Total	16	6	12	3	10	4	11	9	49	22
Education										
Males	8	0	6	0	5	3	5	2	24	5
Females	8	4	6	0	5	2	6	2	25	8
Total	16	4	12	0	10	5	11	4	49	13
Humanities										
Males	5	3	4	4	3	2	3	1	15	10
Females	6	9	4	1	4	4	4	4	18	18
Total	11	12	8	5	7	6	7	5	33	28
Science/Math										
Males	4	1	3	3	3	1	3	1	13	6
Females	5	2	4	3	3	3	3	2	15	10
Total	9	3	7	6	6	4	6	3	28	16
Social Sciences										
Males	4	2	3	0	2	1	3	1	12	4
Females	4	1	3	1	3	1	3	2	13	5
Total	8	3	6	1	5	2	6	3	25	9
Grand Total										
Males	44	18	32	11	27	14	29	8	132	51
Females	46	25	35	13	30	22	32	21	143	81
Total	90	43	67	24	57	36	61	29	275	132

Note. E and O refer to expected and observed frequencies, respectively.
Note. Discrepancies between expected and observed frequencies are due to participants stating a school when they were listed as undeclared.

every seventh name. This procedure was repeated for the Urban group because of the small number of people in each category. Upon filling each category, or upon exhausting the possibilities for each category, the addresses for all of the participants were located and all of the information was placed on either a Master List for males or a Master List for females. Phone numbers were then obtained for those students in the Student Directory, by calling Local Information, or by calling the dormitory in which the student lived. After obtaining the phone numbers, each person was contacted. All males were called by the same male assistant, and all females were called by the author. This was done in order to prevent any problems which may have arisen due to a female calling a male or vice versa.

Of the 550 participants needed to fill the contingency table for both groups, 473 (86.0%) were actually contacted. This was the result of being unable to fill all of the categories. Two-hundred ninety of the Appalachian group were contacted, and 213 (73.0%) actually participated. One-hundred eighty-three of the Urban group were contacted, and 132 (72.0%) actually participated.

This return rate gave a total of 345 students who actually participated in the study. The 213 Appalachian students comprised 12.0% of the Appalachian population, and the 132 Urban students comprised 41.0% of the Urban population.

Materials

Feagin's (1964) Intrinsic/Extrinsic Religion Scale and Reiss' (1967) Sexual Permissiveness Scale (SPS) were utilized to measure religious

and sexual attitudes. The Intrinsic/Extrinsic Religion Scale is a shortened version of the Allport-Ross (1967) Intrinsic/Extrinsic Religious Orientation Scale. Allport (1966) defined intrinsic religious orientation as "the form of religious sentiment that regards faith as a supreme value in its own right. It is oriented toward a unification of being, takes seriously the commandment of brotherhood, and strives to transcend all self-centered needs" (p. 455). Extrinsic religious orientation was defined as "strictly utilitaritan: useful for the self in granting safety, social standing, solace, and endorsement of one's chosen way of life" (p. 455).

The shortened version of the Allport-Ross (1967) scale was first used by Feagin (1964), but it seems that the concept and actual scale were developed earlier by Allport (1959, 1963). There were two reasons for using the shorter version. First, it appears that the shorter version is the more reliable of the two (Hood, 1975), and second, it took less time to answer. Although Allport's scale is still the most widely used scale in religious studies (Batson, Naifeh, & Pate, 1978; Feifel, 1974; Kahoe, 1975, 1977; King & Hunt, 1975; McClain, 1979), the shorter scale seemed to be the better one for use in the present study. The Feagin scale also appears to be just as valid as the Allport-Ross scale. Allport-Ross' scale item-to-item subscale correlations ranged from .18 to .58 while Feagin's item-to-item total scale ranged from .54 to .71 (Hood, 1975; Robinson & Shaver, 1969). Robinson and Shaver (1969) suggest that both scales appear to consistently demonstrate construct validity.

The sexual attitude scale that was utilized was Reiss' (1967) Sexual Permissiveness Scale (SPS). This scale was modified slightly in order to account for the diversity of the present sample. A full sexual relation was defined as any one of the following: 1) vaginal intercourse, 2) oral-genital intercourse, or 3) anal intercourse. According to most authors, these terms encompass the full realm of sexual relations for both heterosexuals and homosexuals (Cooper, 1974; Freund, 1974; Kenyon, 1974).

The SPS is a Guttman scale, and although Guttman scales have not been universally accepted in the social sciences (Cranò & Brewer, 1973, p. 238; Lin, 1976, pp. 188-189), the SPS has been found to consistently meet the criteria for validity and reliability across studies. It is the most widely used scale of attitudes toward premarital sexual permissiveness (Hampe & Ruppel, 1974).

The major criterion for a Guttman scale is the coefficient of reproducibility (reliability). This refers to the scale's ability to produce consistent answers throughout each category of questions. The minimum level of reproducibility is .90 (Hampe & Ruppel, 1974). Almost all studies utilizing the SPS have surpassed the minimum (Hampe & Ruppel, 1974; Heltsley, 1968; Reiss, 1967; Ruppel, 1970). This consistency across studies shows the scale to be reliable. The SPS also appears to be unidimensional, i.e. it appears to tap only the premarital aspect of sexuality (Hampe & Ruppel, 1974), and this is another criterion the Guttman scale must meet.

Hampe and Ruppel (1974) also tested the construct validity of the

SPS using three empirically and theoretically relevant variables--religiosity, sex, and father's occupation. These accounted for a considerably larger amount of the variance on the dependent variable when measured by the SPS than when measured by the other scale used. Hampe and Ruppel also found factorial validity. Theoretically the SPS should have three factors at work when it is answered. The three factors are those of kissing, petting, and sexual intercourse, and affection should be a confounding variable found in all three. Hampe and Ruppel demonstrated this to be true.

Demographic data and questions pertaining to religious and sexual behavior were also included in the questionnaire. These measures were constructed by the present investigator, and the format of the questions was taken from other researchers in the area (Martin & Westbrook, 1973; Reiss, 1967).

A cover letter, the demographic data sheet, the two questionnaires pertaining to attitudes, and the questions pertaining to behavior made up the entire questionnaire which was distributed to the present sample. Appendix A contains an example of the questionnaire, and it also contains an example of the consent form which was distributed with the questionnaire.

Procedure

Prospective participants were contacted by phone, and the format of the conversation was essentially the same in all cases. The phone conversation included a synopsis of the study, and the participants were assured of the confidentiality of the questionnaire, i.e. no one would

see the questionnaire except the investigator. The participants were told that their questionnaires would be kept under lock and key and that their questionnaires would be destroyed after the information had been coded. Appendix B contains an example of the phone conversation. Any questions that the participants had were answered truthfully.

If the student decided to participate, a questionnaire packet was hand-delivered to his or her campus mailbox within two days. If the student lived off-campus, the questionnaire packet was sent through the mail after ascertaining the correct address. The packet included: 1) a cover letter, 2) the questionnaire, 3) a consent form, and 4) two return envelopes addressed to the investigator. One envelope was to be used for the consent form, and one was to be used for the questionnaire. This was to ensure a greater feeling of anonymity. The participants were instructed to take the completed forms to the University Post Office, and they were also instructed that the envelopes were campus mail and did not need a stamp.

Each survey that was sent to a participant was numbered, and the number was also placed by the participant's name on the Master List in order to ascertain whether or not the participant returned his or her questionnaire and to ascertain if the consent form was also returned. If the questionnaire was returned, but the consent form was not returned, the participant's answers were not used, and a new participant was selected. This occurred in one instance. If the participant returned neither the questionnaire nor the consent form, follow-up calls were made. If the participant still planned to respond, they were urged

to complete the questionnaire as soon as possible. If they had lost interest, or had decided not to answer the questionnaire for other reasons, a new participant was selected. Two-hundred three follow-up calls were actually made. Of those, 182 still planned to respond, and 21 had decided not to respond. Of those who still planned to respond, only 75 actually sent back their questionnaires. Of those who had decided not to respond, only 12 new participants could be located who met the criteria.

The selection process for new participants involved going back to the list of names provided by the Data Processing Department starting at the name below the name of the participant who had withdrawn. A new name was chosen by counting down the page seven names. Again, in the case of the Urban group, this process was repeated in cases where the number of people in the category was small. If all of the possible participants had already been selected in that category, no new participant was obtained.

As the questionnaires were returned, they were matched with their respective consent forms and were put under lock and key until the end of the Spring semester. At that time questionnaires were coded. Questionnaires and consent forms were again placed under lock and key for the purpose of having them available in case there were discrepancies in the data. No discrepancies were found, and the questionnaires were destroyed.

Data Reduction, Manipulation, and Analyses

The coding of data was performed as follows:

1) The questionnaires were checked for any anomalies in answers, e.g. if someone had checked both Agree and Disagree for questions on the SPS.

2) The Intrinsic/Extrinsic Religion Scale and the SPS were hand-scored and double-checked for accuracy in scoring.

3) All of the questionnaires were coded by hand and double-checked.

There appeared to be no obvious anomalies in the data, so all 345 questionnaires were used. Punched cards were read onto a disc and almost all of the computations were performed by an IBM 370 computer using the Statistical Package for the Social Sciences.

The four major variables, i.e. religious attitudes, religious behavior, sexual attitudes, and sexual behavior, were manipulated in order to obtain single scores for each variable. The single scores were needed in order to more easily compare the four variables.

Although the religious attitude scale was not truly manipulated, the direction of the scores on the scale was changed. For example, one is usually considered to be more intrinsically religious when one has a low total score on the scale and considered to be more extrinsically religious when one has a high total score on the scale. However, in order to more easily interpret the results of the present study, the converse was considered to be true, i.e. the higher the score the more intrinsically religious one was considered to be. The interpretation became easier because this allowed the religious attitude and religious behavior scores to correlate positively and the religious attitude scores and the sexual attitude and behavior scores to correlate

negatively. The scores on the religious attitude scale could range from 12 to 60, and the raw score of each participant was subtracted from 60 in order to obtain the new scores. This did not change the actual correlations with other variables; it changed only the signs of the correlations.

The religious behavior score was originally a nominal scale which categorized the amount of time one spends in religious activity. This was recoded into a times per year variable by using the midpoint of the frequency of attendance categories in order to have a ratio level of measurement.

Sexual attitudes, as defined by the SPS, were changed into an ordinal scale which ranged from very non-tolerant to very tolerant. Those people who were found to have a total abstinence standard, i.e. only kissing or petting was acceptable, were defined as non-tolerant, and those who were found to have a permissiveness without affection standard, i.e. any sexual behavior was acceptable between consenting people, were defined as very tolerant. The three attitudes between the two extremes were: 1) an orthodox double-standard, i.e. males were allowed to engage in sexual behavior, but females were only allowed to kiss and/or pet, 2) a permissiveness with affection standard, i.e. sexual behavior was acceptable between consenting people as long as affection was present, and 3) a transitional double-standard, i.e. males were allowed to engage in sexual behavior regardless of how they felt about their partner, while females were allowed to engage in sexual behavior only if they were affectionately involved with their partner.

These three standards were placed in the middle and were defined as degrees of tolerance. The resulting scale was as follows:

1) Abstinence standard
2) Orthodox double-standard
3) Permissiveness with affection
4) Transitional double-standard
5) Permissiveness without affection

The creation of this ordinal scale necessitated the use of all rank-order correlations for analyses involving sexual attitudes.

Table 4 presents the analyses performed with each of the Hypotheses presented earlier. The analyses shown in Table 4 were used in order to examine the results of the present study.

Table 4

Summary of Analyses Performed
for each Hypothesis

Hypotheses	Analyses
Hypotheses 1A & 1B	Kendall's *tau* Test for significance between two dependent correlations
Hypothesis 1C	Kendall's *tau* Partial correlation Test for significance between two dependent correlations
Hypothesis 2	Kendall's *tau* Test for significance between two independent correlations
Hypothesis 3A	Partial correlation
Hypothesis 3B	Chi-square
Hypothesis 3C	Partial correlation
Hypotheses 3D, 3E, & 3F	Kendall's *tau* Test for significance between two independent correlations
Hypotheses 3G & 3H	No analyses due to limited number of participants in the categories

RESULTS

The results of the study will be presented in three major sections. First, the sample will be described with regard to demographic characteristics. Second, the sample will be described in relation to the four primary variables of religious attitudes, religious behavior, sexual attitudes, and sexual behavior. Last, the results of the specific hypotheses will be presented and examined. The raw data, from which the results were obtained, may be found in Appendix D.

Description of Sample

The Appalachian and Urban groups utilized in the present study comprised the total sample, and the groups were examined in terms of two sampling criteria. First, the Appalachian and Urban groups were inspected in order to determine whether or not they were valid representatives of the Appalachian population at Morehead State University in relation to demographic characteristics. Then, the two groups were analyzed in conjunction with each other in order to decide if the two were matched with regard to demographic characteristics. These latter analyses were performed for the purpose of ascertaining the validity of any comparisons made between the two groups.

Validity of sample with regard to population. The composition of both the Appalachian and Urban groups was based on the stratification requirements of academic classification and school within the University as discussed in the methodology (see Tables 2 and 3). Therefore, it was necessary to determine whether or not the Appalachian and Urban groups met the *a priori* stratification requirements.

The composition of the Appalachian group was examined by using a Chi-square with academic classification and school within the University. It was found that the number of people in the group did not meet the expected frequency requirements as defined by the stratified structure of the Appalachian population, χ^2 (18) = 35.34, $p < .01$. The same Chi-square was performed for each sex within the Appalachian group. The number of males did not meet the expected frequency requirements, χ^2 (18) = 32.18, $p < .05$, while the number of females did meet the expected frequency requirements, χ^2 (18) = 21.20, $p > .10$.

Inspection of the component Chi-square values produced for each category showed that in both cases where the stratification requirements were not met, it was caused by the same two categories. The Applied Science Junior category produced fewer participants than expected as did the Education Freshman category. This was not to be totally unexpected because most of the Applied Science major fields of study are two-year programs, and most Education major fields of study do not begin until the Sophomore year of college. Therefore, it seems unrealistic to expect these categories to have large numbers of participants in them. Thus, it seems reasonable to suggest that these discrepancies did not seriously affect the validity of the Appalachian group with regard to the Appalachian population at Morehead State University.

The composition of the Urban group was also examined by using a Chi-square with academic classification and school within the University. It was found that the number of people in the group did

not meet the expected frequency requirements as defined by the stratified structure of the Appalachian population, χ^2 (18) = 93.23, $p < .01$. The same Chi-square was performed for each sex within the Urban group. Neither the number of males nor the number of females met the expected frequency requirements, χ^2 (18) = 59.23, $p < .01$, and χ^2 (18) = 43.83, $p < .01$, respectively. These analyses indicate that the Urban group did not meet the *a priori* matching stratification requirements.

Inspection of the component Chi-square values produced for each category showed that in all three cases where the Urban group did not meet the stratification requirements, it was primarily due to the same three schools within the University. The schools of Applied Science, Business, and Education produced fewer participants than expected for the Urban group. In the school of Applied Science, fewer participants than expected were obtained for the academic classes of Freshman, Sophomore, and Senior. In the case of the Senior academic class, it may be that the small number of participants was due to the lack of four-year degree programs. However, in view of the Freshman and Sophomore academic classes also being underrepresented, it would appear more likely that Urban students were not as apt to pursue major fields of study in the Applied Sciences as Appalachian students.

In the school of Business, fewer participants than expected were obtained for the academic classes of Freshman and Sophomore. Again, this seems to indicate that Urban students were not as likely as Appalachian students to pursue major fields of study in the school of Business.

In the school of Education, fewer participants than expected were obtained for the academic classes of Freshman, Sophomore, and Junior. In the case of the Freshman academic class, it is possible that the small number of participants was a result of the fact that students majoring in Education do not do so until their Sophomore year of college. However, since there was a lack of students in the Sophomore and Junior academic classes, also, it seems more reasonable to assume that Urban students were not as likely to pursue major fields of study in the school of Education as Appalachian students.

The above indicates that there were differences between the Urban and Appalachian groups based on the stratified structure of the Appalachian population at Morehead State University. Urban students appeared less likely to pursue major fields of study leading to technical and professional careers. If this difference was a true one, and not due to the small population size of the Urban group, then the small number of participants in the above categories reveals basic differences between the Urban and Appalachian groups. The attempt to draw an Urban group based on the stratified structure of the Appalachian population would inevitably show any differences between the Urban and Appalachian groups, at least in terms of major field of study.

However, it seems reasonable to suggest that, although the Urban group did not meet the *a priori* stratification requirements, it is more important to determine whether or not the Urban group was matched with the Appalachian group in terms of demographic characteristics. This is important because the primary reason for obtaining the Urban group based

on the stratification characteristics of the Appalachian population was to ensure that the Urban group would match the Appalachian group.

Another indicator of the validity of a sample with regard to the population is that of return rate. It was mentioned earlier that an investigator must have a return rate of at least 50.0% in order to legitimately generalize the results of a study to an entire population. It is therefore necessary to determine whether or not the Appalachian and Urban groups met this criteria. The return rate for the Appalachian group was 73.0% and thus met the criteria.

Although the Urban group was not selected on the basis of the characteristics of the Urban population at Morehead State University, it was considered necessary for the Urban group to be a representative sample of the Urban population in order to ensure that all results obtained for the Urban group were truly representative of the Urban population. Return rate was the only indicator of how well the Urban group represented the Urban population. The return rate was 72.0%, and thus it would seem reasonable to conclude that the Urban group was a valid representative of the Urban population. Also, the Urban group represented 41.0% of the total Urban population, and that would suggest that the Urban group was a representative sample of the Urban population at Morehead State University.

One other indicator of the the validity of a sample with regard to the population must be considered for the Appalachian group. The size of the Appalachian group was based on Lin's (1976, p. 446) criteria as discussed in the methodology (see page 23). This 213 participants in

the Appalachian group represented 12.0% of the Appalachian population, but did not meet the expected number of people which were needed in order to approximate Lin's criteria, i.e. 275. However, the number of participants was close enough to Lin's criteria to estimate that the results of the present study can be generalized to the entire Appalachian population at Morehead State University with approximately 93.0% confidence that the results are valid for the population.

The above indicates that the Appalachian group was a valid representative of the Appalachian population in terms of the *a priori* stratification requirements, in terms of return rate, and in terms of Lin's (1976, p. 446) criteria. However, it was found that the Urban group was not a representative sample of the Appalachian population in terms of all the *a priori* stratification requirements, but this may not be extremely important for the present study. It was seen that the Urban group was a representative sample of the Urban population with regard to return rate.

Matching of Appalachian and Urban groups. It was realized that in order to accept the results of any comparisons made between the Appalachian and Urban groups as valid, the two groups needed to be matched on the bases of several demographic characteristics. An attempt was made to match the groups with regard to academic classification and school within the University based on the *a priori* stratification requirements discussed previously, and in terms of sex as divided between the different academic classes and schools. Age was also considered an important variable for which the two groups should be matched. Table 5 shows these sample characteristics for both the Appalachian and Urban groups.

Table 5

Sample Characteristics as Defined by Demographic Data

	Appalachian		Urban		Total	
	n	%	n	%	n	%
Academic Class[a]						
Freshman	66	(31.0)	43	(32.6)	109	(31.6)
Sophomore	50	(23.5)	21	(15.9)	71	(20.6)
Junior	42	(19.7)	34	(25.8)	76	(22.0)
Senior	51	(23.9)	29	(22.0)	80	(23.2)
N	213		132		345	
School						
Undeclared	12	(5.6)	8	(6.1)	20	(5.8)
Applied Science	52	(24.4)	35	(26.5)	87	(25.2)
Business	48	(22.5)	22	(16.7)	70	(20.3)
Education	26	(12.2)	13	(9.8)	39	(11.3)
Humanities	19	(8.9)	28	(21.2)	47	(13.6)
Science/Math	29	(13.6)	16	(12.1)	45	(13.0)
Social Sciences	27	(12.7)	10	(7.6)	37	(10.7)
N	213		132		345	
Sex						
Male	87	(40.8)	51	(38.6)	138	(40.0)
Female	126	(59.2)	81	(61.4)	207	(60.0)
N	213		132		345	
Age[b]						
Range	18-25		18-24		18-25	
Mean	19.97		20.23		20.07	
N	213		132		345	

[a] Four of the Appalachian group and five of the Urban group did not specify their academic classification.

[b] Seventeen of the Appalachian group and seven of the Urban group did not specify their ages.

The Appalachian and Urban groups appear to be fairly evenly matched in terms of academic classification with regard to the Freshman and Senior academic classes. However, as can be seen in Table 5, there seem to be discrepancies between the two groups for the academic classes of Sophomore and Junior. In order to determine whether or not academic class was dependent upon group, a Chi-square was performed with academic classification and group, χ^2 (3) = 3.81, $p > .10$. This indicates that the two groups were matched with regard to academic classification.

The two groups also appear to be fairly evenly matched in terms of school within the University. Inspection of Table 5 does, however, show a fairly large difference in the school of Humanities where the Appalachian population was underrepresented and the Urban population was overrepresented. A Chi-square with school and group was performed in order to ascertain if the difference was significant, and it was found that it was, χ^2 (6) = 13.11, $p < .05$. In viewing the component Chi-square values obtained for each school, it was found that the school of Humanities category produced fewer participants than expected for the Appalachian group. However, it was found that the groups were well-matched in terms of the other schools within the University, and therefore it is suggested that the two groups were essentially equal with regard to school within the University.

The sex of the participants in the two groups appear to be very well-matched. However, in order to determine whether or not this was the case, a Chi-square with sex and group was performed, χ^2 (1) = .17, $p > .10$. Thus, it may be concluded that the groups were matched with

regard to sex.

Table 5 shows the mean ages for both the Appalachian and Urban groups, and it appears that the two mean ages were very similar. In order to ascertain if this was true, a Student's t was performed on the mean ages of the Appalachian and Urban groups. The t-test indicated that the groups were well-matched with regard to age, t (319) = 1.52, $p > .10$.

Return rate must again be considered for the purpose of matching the two groups. The Appalachian group's return rate was 73.0%, and the Urban group's return rate was 72.0%. This suggests that the two groups were equally motivated to participate in the study.

The above analyses revealed that the Appalachian and Urban groups were well-matched in relation to academic classification, sex, age, and return rate. The only disparity between the groups was found in school within the University. However, the groups were matched evenly enough on every other variable to conclude that comparisons made between the two groups were valid.

Description of Sample with Regard to Major Variables

In describing the sample utilized in the present study, it was deemed necessary to examine it with regard to the four major variables of interest. Therefore, the religious attitude scores, religious behavior scores, sexual attitude scores, and sexual behavior scores will now be presented and examined with regard to the Appalachian and Urban groups.

Religious attitudes. The attitudes of the Appalachian and Urban groups toward religion were measured by the Feagin Intrinsic/Extrinsic

Religion Scale. The score on the Intrinsic subscale and the score on the Extrinsic subscale were combined to derive a total score for each participant. This provided a score which could range from 12 to 60 with higher scores reflecting a more intrinsic religious orientation. Table 6 shows the means and standard deviations for each group according to sex. As can be seen, the mean religious attitude scores appear to be fairly similar for the Appalachian and Urban groups. Appalachian male and Urban male mean religious attitude scores appear to be fairly similar as do Appalachian female and Urban female mean religious attitude scores. However, there appear to be differences according to sex. Appalachian females appear to have a higher mean religious attitude score than Appalachian males, and Urban females appear to have a higher mean religious attitude score than Urban males.

In order to determine if statistical differences existed in any of the above comparisons, a two-way analysis of variance with sex, i.e. males vs. females, as one factor, and group, i.e. Appalachian vs. Urban, as the second factor, was performed. This test indicated that females did have significantly higher mean religious attitude scores than males, F (1, 341) = 5.93, p = .02. The effect of group and the interaction were not statistically significant, F's < 1.00 (see Appendix E). Thus, the only difference in terms of sexual attitudes involved males and females, and as might be expected, females were more religious in their attitudes than males.

Religious behavior. Religious behavior was defined as participation in organized religious events, and it was recorded as times per year.

Table 6

Sample Characteristics as Defined by
Religious Attitude Scores

Sex	Group		
	Appalachian	Urban	Total
Males			
Mean	25.6	25.7	25.6
Standard Deviation	6.03	6.85	6.32
N	87	51	138
Females			
Mean	27.7	26.8	27.3
Standard Deviation	6.44	6.31	6.39
N	126	81	207
Total			
Mean	26.8	26.4	26.7
Standard Deviation	6.34	6.52	6.41
N	213	132	345

This provided a religious behavior score which could range from 0 to 104 with higher scores indicating more religious behavior. Table 7 shows the means and standard deviations for each group according to sex. As can be seen, the mean religious behavior scores appear to be fairly similar for the Appalachian and Urban groups. Appalachian male and Urban male mean religious behavior scores appear to be fairly similar as do Appalachian female and Urban female mean religious behavior scores. However, as with the religious attitude scores, there appear to be differences according to sex with both groups of females having a higher mean religious behavior score.

In order to determine if statistical differences existed in any of the above comparisons, a two-way analysis of variance with sex, i.e. males vs. females, as one factor, and group, i.e. Appalachian vs. Urban, as the second factor, was performed. This test indicated that females did have significantly higher mean religious behavior scores than males, F (1, 341) = 6.12, $\underline{p}$ = .01. The effect of group and the interaction were not statistically significant, F's < 1.00 (see Appendix E). Thus, it may be concluded that the only difference in terms of religious behavior was found between males and females, and as might be expected, females were involved more frequently in religious activities than males.

In viewing the mean religious attitude scores and the mean religious behavior scores in conjunction with each other, it can be seen that the pattern of differences is the same in both cases. The Appalachian and Urban groups' mean religious attitude scores and mean religious behavior scores were similar. This was also true for males between groups and

Table 7

Sample Characteristics as Defined by
Religious Behavior Scores

Sex	Group		
	Appalachian	Urban	Total
Males			
Mean	21.9	19.8	21.1
Standard Deviation	32.81	26.10	30.42
N	87	51	138
Females			
Mean	31.0	29.5	30.5
Standard Deviation	38.03	35.46	36.96
N	126	81	207
Total			
Mean	27.3	25.8	26.7
Standard Deviation	36.20	32.41	34.75
N	213	132	345

for females between groups. However, in both the mean religious attitude scores and the mean religious behavior scores, differences were found between males and females with females having the higher mean scores in both cases. Thus, it may be concluded that females were more intrinsically religious in their attitudes and more active in organized religious events than males.

It is also appropriate to examine the standard deviations for the mean religious attitude scores and the mean religious behavior scores in order to determine the degree of variability of each. Table 6 and Table 7 show the standard deviation for mean religious attitude scores and mean religious behavior scores, respectively. As can be seen, the standard deviations for the religious attitude scores were relatively small in comparison with the standard deviations for the religious behavior scores. This indicates that the variability around the mean religious behavior scores was much greater than for the religious attitude scores.

Sexual attitudes. The attitudes of the Appalachian and Urban groups toward premarital sexual behavior were measured by the Reiss SPS. Scores on the SPS were derived by assigning ranks to the five different attitudes possible. This provided a score which could range from 1 to 5 with higher scores reflecting a more liberal attitude toward premarital sexual behavior. Table 8 shows the number and percentage of participants in each group who reported the attitudes according to sex. The median scores are also shown. As can be seen, the median sexual attitude scores appear to be similar for Appalachian males, Appalachian females, and Urban females. The only disparate median sexual attitude score was for

Table 8

Sample Characteristics as Defined by Sexual Attitude Scores

	Group					
	Appalachian		Urban		Total	
Attitude by Sex	n	%	n	%	n	%
Males						
1	26	(29.9)	8	(15.7)	34	(24.6)
2	6	(6.9)	3	(5.9)	9	(6.5)
3	23	(26.4)	14	(27.5)	37	(26.8)
4	8	(9.2)	1	(2.0)	9	(6.5)
5	24	(27.6)	25	(49.0)	49	(35.5)
Median	3.0		4.0		3.2	
Females						
1	31	(24.6)	27	(33.3)	58	(28.0)
2	6	(4.8)	3	(3.7)	9	(4.3)
3	53	(42.1)	31	(38.3)	84	(40.6)
4	4	(3.2)	4	(4.9)	8	(3.9)
5	32	(25.4)	16	(19.8)	48	(23.2)
Median	2.9		2.8		2.9	
Total						
1	57	(26.8)	35	(26.5)	92	(26.7)
2	12	(5.6)	6	(4.5)	18	(5.2)
3	76	(35.7)	45	(34.1)	121	(35.1)
4	12	(5.6)	5	(3.8)	17	(4.9)
5	56	(26.3)	41	(31.1)	97	(28.1)
Median	2.9		3.1		3.0	

Note. The numbers one through five represent the five categories designated as sexual attitudes. The five attitudes are: 1) Abstinence, 2) Orthodox double-standard, 3) Permissiveness with affection, 4) Transitional double-standard, and 5) Permissiveness without affection.

the Urban males. Table 8 indicates that Urban males had a higher median sexual attitude score than Appalachian males, Appalachian females, or Urban females.

In order to determine whether or not statistical differences existed in any of the above comparisons, a median Chi-square test with Appalachian males, Appalachian females, Urban males, and Urban females was performed, χ^2 (3) = 11.66, $p < .01$. This test indicated that sexual attitude was significantly dependent upon group. However, inspection of the component Chi-square values indicated that the Urban male group accounted for most of the final Chi-square value. Urban males were underrepresented in the below median category and overrepresented in the above median category. Therefore, Urban males were more liberal in their sexual attitudes than Appalachian males, Appalachian females, or Urban females.

Sexual behavior. Sexual behavior was defined by two criteria. The first criterion was the type of sexual behavior in which a participant had engaged, and the second criterion was frequency of sexual behavior. Table 9 shows the number and percentage of participants in each group who had engaged in some type of full sexual relation. Also shown are the types of sexual relations in which participants had engaged. It should be noted that the Oral, Vaginal, and Anal intercourse categories are not mutually exclusive. Table 9 shows the means and standard deviations for frequency of sexual relations for each group according to sex, also. Frequency of sexual relations was recorded as times per year, and scores could range from 0 to 104.

As can be seen by inspection of Table 9, the percentage of

Table 9

Sample Characteristics as Defined by Measures of Sexual Behavior

Sex	Appalachian n	Appalachian %	Urban n	Urban %	Total n	Total %
Males						
Sexual Intercourse	60	(69.0)	39	(76.5)	99	(72.0)
Oral	51	(85.0)	31	(79.5)	82	(82.8)
Vaginal	55	(91.7)	38	(97.4)	93	(93.9)
Anal	19	(31.7)	5	(12.8)	24	(24.2)
Females						
Sexual Intercourse	83	(65.9)	50	(61.7)	133	(64.3)
Oral	57	(68.7)	38	(76.0)	95	(71.4)
Vaginal	79	(95.2)	46	(92.0)	125	(94.0)
Anal	16	(19.3)	12	(24.0)	28	(21.1)
Total						
Sexual Intercourse	143	(67.1)	89	(67.4)	232	(67.2)
Oral	108	(75.6)	69	(77.5)	177	(76.3)
Vaginal	134	(93.7)	84	(94.4)	218	(94.0)
Anal	35	(24.5)	17	(19.1)	52	(22.4)
Frequency in times per year						
Males						
Mean	33.8		24.6		30.4	
Standard Deviation	33.77		27.18		31.29	
Females						
Mean	41.9		44.6		43.6	
Standard Deviation	35.56		38.85		36.89	
Total						
Mean	38.3		34.0		37.5	
Standard Deviation	34.95		36.30		34.96	

Note. Percentages for the Oral, Vaginal, and Anal categories are percentages of the total percentage of people who had engaged in sexual intercourse.

participants who had engaged in full sexual relations followed a pattern similar to that of the percentage of participants who employed a very liberal sexual attitude. Urban males had the largest percentage of participants who had engaged in full sexual relations, followed by Appalachian males, Appalachian females, and Urban females, respectively. However, with regard to frequency of sexual relations, the pattern is opposite. Urban females had the highest mean frequency score, followed by Appalachian females, Appalachian males, and Urban males, respectively. Thus, it appears that although males were more likely to engage in full sexual relations, they engaged less frequently than females.

Based on the criteria found in Table 9, factor scores were calculated in order to give a single measure of sexual behavior. The factor scores could range from -1.19 to 1.98, with higher scores indicating more sexual behavior. It was necessary to determine whether or not the factor scores were a valid measure of sexual behavior in terms of type of sexual behavior and in terms of frequency of sexual behavior. A Pearson's r was performed between the factor scores and whether or not one had engaged in full sexual relations, $r = .83$, $\underline{p} < .0001$. A Pearson's r was also performed between the factor scores and how often a participant experienced sexual relations, $r = .76$, $\underline{p} < .0001$. Thus, it appears that the factor scores were valid measures of sexual behavior.

Table 10 shows the means and standard deviations for each group according to sex with regard to the factor scores. As can be seen, the mean sexual behavior scores appear to be fairly consistent between the Appalachian and Urban groups, between males in both groups, and between

Table 10

Sample Characteristics as Defined by
Sexual Behavior Scores

Sex	Group		
	Appalachian	Urban	Total
Males			
Mean	0.082	0.060	0.074
Standard Deviation	1.0160	0.8660	0.9602
N	87	51	138
Females			
Mean	-0.043	-0.059	-0.049
Standard Deviation	0.9970	1.0700	1.0240
N	126	81	207
Total			
Mean	0.008	-0.013	-0.001
Standard Deviation	1.0040	0.9950	0.9990
N	213	132	345

females in both groups. However, males in both groups appear to have slightly higher mean sexual behavior scores than females in both groups.

In order to determine whether or not there were statistical differences in any of the above comparisons, a two-way analysis of variance with sex, i.e. males vs. females, as one factor, and group, i.e. Appalachian vs. Urban, as the second factor, was performed. This test indicated that neither the effect of sex, group, nor the interaction was significant, F's < 1.00 (see Appendix E). Thus, it may be concluded that there were no differences in terms of sexual behavior.

In viewing the sexual attitude scores and sexual behavior scores in conjunction with each other, it can be seen that the two did not follow similar patterns. For the sexual attitude scores, Urban males were significantly more liberal than Appalachian males, Appalachian females, and Urban females. However, no significant differences were found with regard to sexual behavior. This latter finding is probably due to the fact that although a larger percentage of males had engaged in sexual relations, females engaged more frequently.

From the above analyses regarding religious attitudes, religious behavior, sexual attitudes, and sexual behavior, it may be seen that religious attitudes were a good predictor of religious behavior because the differences found were consistent in both cases, i.e. between males and females. However, in the case of sexual attitudes and behavior, it was found that sexual attitudes did not necessarily predict sexual behavior because there were differences between males and females with regard to sexual attitudes but no differences with regard to sexual behavior.

Hypothesis One

Hypothesis 1 stated that there would be relationships among religious attitudes, religious behavior, sexual attitudes, and sexual behavior. Specifically, it was proposed that attitudes would predict attitudes more readily that attitudes would predict behavior and that behavior would predict behavior more readily than behavior would predict attitudes. It was also proposed that sexual attitudes would predict sexual behavior very well until the effects of religious attitudes and behavior were controlled. Table 11 shows the results of Hypothesis 1.

Hypothesis 1A. Hypothesis 1A stated that religious attitudes would predict sexual attitudes better than religious attitudes would predict sexual behavior. In order to determine whether or not this was true, simple *taus* were computed for the religious attitude and sexual attitude scores, τ (343) = -.27, $p < .001$, and for the religious attitude and sexual behavior scores, τ (343) = -.13, $p < .001$. A test for the difference between two dependent correlations was then performed.[2] As can be seen in Table 11, the two *tau* values were significantly different, τ (342) = -2.43, $p < .05$. Thus, it may be concluded that religious attitudes did predict sexual attitudes more readily than religious attitudes predicted sexual behavior.

Hypothesis 1B. Hypothesis 1B stated that religious behavior would predict sexual behavior more readily than religious behavior would predict sexual attitudes. In order to ascertain whether or not this was the case,

[2]The test for differences between two dependent correlations is used in order to see whether or not two variables which are correlated with one other variable are significantly different from each other. This analysis is performed with scores from the same sample. See Bruning and Kintz (1977, pp. 215-216).

Table 11

Summary Table for Differences between Two Dependent Correlations for Hypothesis 1

Hypothesis	Simple *tau*	N	t
1A			
RA with SA	-.27***	345	-2.43*
RA with SB	-.13***		
1B			
RB with SB	-.23***	345	1.60
RB with SA	-.32***		
1C			
SA with SB	.38***	345	1.07
SA with SB RA RB	.32***		

Note. RA refers to religious attitude scores, RB refers to religious behavior scores, SA refers to sexual attitude scores, and SB refers to sexual behavior scores.

*$p < .05$.

***$p < .001$.

simple *taus* were computed for the religious behavior and sexual behavior scores, τ (343) = -.23, $p < .001$, and for the religious behavior and sexual attitude scores, τ (343) = -.32, $p < .001$. A test for differences between two dependent correlations was then performed. As can be seen in Table 11, the two *tau* values were not significantly different. Thus, it may be concluded that religious behavior did not predict sexual behavior more readily than religious behavior predicted sexual attitudes.

Hypothesis 1C. Hypothesis 1C stated that sexual attitudes would predict sexual behavior very well until the effects of religious attitudes and religious behavior were controlled. In order to determine whether or not the hypothesis was confirmed, a simple *tau* was computed for sexual attitudes and behavior, and a partial correlation was performed for sexual attitudes and behavior controlling for the effects of religious attitudes and behavior, τ (343) = .38, $p < .001$ and τ (341) = .32, $p < .001$, respectively. A test for differences between two dependent correlations was performed. As can be seen from inspection of Table 11, the two *tau* values were not significantly different. Thus, it appears that sexual attitudes predicted sexual behavior just as readily when the effects of religious attitudes and religious behavior were controlled. Therefore, it may be concluded that regardless of religious attitudes and behavior, sexual attitudes were still a significant predictor of sexual behavior.

Hypothesis Two

Hypothesis 2 stated that the Appalachian participants would differ significantly from the Urban participants in terms of religious attitudes

and behavior and sexual attitudes and behavior. Table 12 shows the simple *tau* values for each of the variables for each group. After the simple *tau* values were computed, tests for significant differences between two independent correlations were performed.3 The analyses indicated that none of the *taus* were significantly different between groups, Z's < 1.96, $p > .05$. The results of the analyses indicated that, contrary to the hypothesis, there were no significant differences between the Appalachian and Urban groups with regard to religious attitudes and behavior and sexual attitudes and behavior.

Hypothesis Three

Hypothesis 3 stated that the contributing factors of sex, double-standard, age, school within the University, fraternity or sorority membership, college residence, and sexual preference would affect the relationships among religious attitudes and behavior and sexual attitudes and behavior. In order to ascertain how the contributing factors affected the four major variables, statistical analyses were performed.

Hypothesis 3A. Hypothesis 3A stated that males would be more liberal than females in terms of both sexual attitudes and behavior, even when the effects of religious attitudes, religious behavior, and group, i.e. Appalachian or Urban, were controlled. In order to determine if males were more liberal than females in terms of sexual attitudes, a simple *tau* was computed using sex and sexual attitude, τ (343) = .09, $p > .10$. The *tau* value indicated that sexual attitudes were not significantly related

[3]The test for differences between two independent correlations is used in order to determine significant differences in the same correlations between two groups. See Bruning and Kintz (1977, pp. 214-215).

Table 12

Simple *tau* Values for Appalachian and Urban Groups as Defined by Hypothesis 2

	Simple *tau*			
Appalachian[a]				
	RA	RB	SA	SB
RA		.36***	-.32***	-.11
RB			-.31***	-.21***
SA				.33***
SB				
Urban[b]				
	RA	RB	SA	SB
RA		.33***	-.17**	-.18**
RB			-.35***	-.26***
SA				.46***
SB				

Note. RA refers to religious attitude scores, RB refers to religious behavior scores, SA refers to sexual attitude scores, and SB refers to sexual behavior scores.

[a] $n = 213$.

[b] $n = 132$.

**$p < .01$.

***$p < .001$.

to sex, and therefore the partial correlations were not meaningful.

In order to determine if males were more liberal than females in terms of sexual behavior, a simple *tau* was computed using sex and sexual behavior, τ (343) = .04, $p > .10$. The *tau* value indicated that sexual behavior was not significantly related to sex, and therefore the partial correlations were not meaningful. These analyses indicated that males were not more liberal in terms of either sexual attitudes or sexual behavior than females, and thus, the hypothesis was not confirmed.

Hypothesis 3B. Hypothesis 3B stated that the double-standard would be present and would be more prevalent in the Appalachian group. Although it has been seen that some participants did hold a double-standard (see Table 8), a Chi-square with double-standard and group showed no significant differences in terms of a double-standard, χ^2 (1) = .48, $p > .10$. Thus, in accordance with the earlier data, there were no differences between the Appalachian and Urban groups in terms of a double-standard.

Hypothesis 3C. Hypothesis 3C stated that sexual tolerance, in terms of both attitudes and behavior, would increase with age, even when the effects of religious attitudes, religious behavior, and sex were controlled. In order to determine whether or not any age differences were present, simple *taus* were performed for age and sexual attitudes and age and sexual behavior, τ (343) = .05, $p > .10$ and τ (343) = .05, $p > .10$, respectively. The *tau* values indicated that sexual attitudes and sexual behavior were not significantly related to age, and therefore the partial correlations were not meaningful. Thus, it may be concluded

that no age differences were present in terms of sexual attitudes or sexual behavior. However, this lack of an age effect may be due to the small age range used in the present study.

Hypothesis 3D. Hypothesis 3D stated that no significant differences would be found with regard to the four major variables among the participants in the six different schools within the University.[4] Simple *taus* were computed for each school on each of the following:

1) Religious attitudes with religious behavior
2) Religious attitudes with sexual attitudes
3) Religious attitudes with sexual behavior
4) Religious behavior with sexual attitudes
5) Religious behavior with sexual behavior
6) Sexual attitudes with sexual behavior

After the simple *taus* were computed, tests for differences between two independent correlations were performed for each of the schools with all other schools on the six variables cited above. The analyses revealed that there were no significant differences, Z's < 1.96, $p > .05$ (see Appendix F). Since no significant differences were found, it may be concluded that relationships among the four major variables were not a function of school within the University, and therefore the hypothesis may be accepted.

Hypothesis 3E. Hypothesis 3E stated that there would be significant differences in terms of religious attitudes, religious behavior, sexual attitudes, and sexual behavior between participants who were members of a fraternity and those who were not members of a fraternity. Table 13 shows the simple *taus* calculated for the fraternity and non-fraternity

[4]Undeclared was also defined as a school, and therefore seven sets of comparisons were actually performed.

Table 13

Simple *tau* Values for Fraternity and Non-fraternity Members as Defined by Hypothesis 3E

	Simple *tau*			
Fraternity[a]	RA	RB	SA	SB
RA		.31	-.30	.01
RB			-.47***	-.20
SA				.03
SB				
Non-fraternity[b]	RA	RB	SA	SB
RA		.27***	-.26***	-.08
RB			-.29***	-.26***
SA				.32***
SB				

Note. RA refers to religious attitude scores, RB refers to religious behavior scores, SA refers to sexual attitude scores, and SB refers to sexual behavior scores.

[a] $n = 33$.

[b] $n = 105$.

***$p < .001$.

members. In order to determine if there were significant differences between the simple *tau* values, tests for differences between two independent correlations were performed for each of the six combinations of variables shown in Table 13. No significant differences were found, Z's < 1.96, p > .05. Since no significant differences were found between fraternity and non-fraternity members in terms of the four major variables, it may be concluded that the relationships among the variables were not affected due to fraternity membership, and thus, the hypothesis cannot be accepted.

Hypothesis 3F. Hypothesis 3F stated that there would be no significant differences in terms of religious attitudes, religious behavior, sexual attitudes, and sexual behavior between participants who were members of a sorority and those who were not members of a sorority. Table 14 shows the simple *tau* values calculated for the sorority and non-sorority members. In order to determine if there were significant differences between the simple *tau* values, tests for differences between two independent correlations were performed for each of the six combinations of variables shown in Table 14. No significant differences were found, Z's < 1.96, p > .05. Since no differences were found in terms of the four major variables, it may be concluded that the relationships among the variables were not affected by sorority membership, and thus, the hypothesis may be accepted.

Hypotheses 3G and 3H. Hypothesis 3G which stated that participants who lived off-campus without their parents would be more liberal in terms of sexual attitudes and behavior than participants who lived on-campus,

Table 14

Simple *tau* Values for Sorority and Non-sorority Members as Defined by Hypothesis 3F

	Sorority[a]			
	Simple *tau*			
	RA	RB	SA	SB
RA		.37***	-.19	-.14
RB			-.23	-.20
SA				.52***
SB				
	Non-sorority[b]			
	RA	RB	SA	SB
RA		.37***	-.28***	-.19***
RB			-.36***	-.22***
SA				.45***
SB				

Note. RA refers to religious attitude scores, RB refers to religious behavior scores, SA refers to sexual attitude scores, and SB refers to sexual behavior scores.

[a] $n = 39$.

[b] $n = 168$.

***$p < .001$.

and Hypothesis 3G which stated that participants with sexual preferences other than heterosexual would be more liberal in terms of the four major variables, were not analyzed due to the lack of participants who were members of the comparison groups. Only 19 (6.0%) of the 345 participants lived off-campus without their parents, and only 10 (3.0%) of the 345 participants reported sexual preferences other than heterosexual.

DISCUSSION

The results of the present study will be discussed in three major sections. First, the sample will be evaluated in terms of the four primary variables of religious attitudes, religious behavior, sexual attitudes, and sexual behavior. Second, the results of the specific hypotheses will be evaluated and interpreted. Last, the implications of the results will be discussed with regard to major findings and suggestions for future research will be made.

Evaluation of Sample with Regard to Major Variables

The present sample was examined in terms of the results found for each of the four major variables. Now, the results will be compared with other studies which have utilized the same major variables.

Religious attitudes. Other studies that have used intrinsic/extrinsic measures of religiosity have not provided the information needed in order to compare the present sample with them. In the present study, the mean scores for religious attitudes were provided and could be used for purposes of comparison; however, other studies have not provided this information so comparisons could not be made. It is possible to compare the present sample with others in terms of differences found in religious attitudes.

The present results indicated that females were significantly more intrinsically religious than males. Other studies mentioned previously have also found this to be true. Clouse (1973), who utilized a religious attitude scale designed to tap conservative vs. liberal religious attitudes

in college students, found that 78.7% of the females in her college sample were conservative while only 57.8% of the males were conservative in their religious attitudes. Mol (1970), in a sample drawn to represent 68.0% of the Australian population, suggested that females were more religious in their attitudes than males. Lindenfeld (1960), in a college sample, also found that females had stronger religious attitudes than males. Lindenfeld used importance of religious group as the major determining variable. If participants considered membership in a religious group to be very important, they were classified as having stronger religious attitudes than participants who considered group membership less important.

Although none of the above studies measured religious attitudes in the same manner as the present study, the results suggest the same conclusion. Regardless of the measure of religious attitudes, females are more religious than males. This finding was not unexpected, and although the above studies do not give any explanation as to why this appears to be true, perhaps it can best be explained in terms of traditional sex-role orientation and modelling.

Traditionally, males have been raised as independent, aggressive, assertive leaders while females have been raised as dependent, passive, submissive followers (Lynn, 1961; 1966). Males, as independent leaders, have been allowed to make choices about the different attitudes and behavior they will accept. Religious attitudes represent one area where this freedom of choice can be employed. It is generally acceptable for males to accept or reject the religious attitudes of their parents. Females, as dependent followers, are generally not free to make choices

about attitudes and behavior, and this includes religious atitudes. Since females' roles have been defined for them, they are supposed to accept whatever attitudes authority figures propose. Therefore, females are to accept the religious attitudes of their parents, and to reject these attitudes is generally not acceptable.

Another reason why females are more likely to have stronger religious attitudes than males is closely related to the reason above. American society is dominated by males, and males have traditionally taken the role of instrumental leader in the family, i.e. the male works outside the home in order to provide financial security for the home. The female, however, has been designated as the expressive leader, and her traditional role exists primarily in the home. It is the mother who provides nurturance and moral training for the children, and it is also the mother who usually provides religious training for the children. As such, she is perceived as the more religious of the two parents, and if the concept of modelling is valid, i.e. each child imitates the same-sex parent (Weitz, 1977, p. 60), it would follow that the female child would be more religious than her male counterpart.

It is suggested that these two factors contribute heavily to the finding that females have greater religious attitudes than males. Traditional sex-roles, which have led to a society dominated by males, have more often than not, caused females to be more religious than males. Through the process of modelling, the tradition has been perpetuated.

Religious behavior. It was not possible to compare the present sample with other studies that have utilized the same measure of religious

behavior as the present sample. Other studies have used scales which categorize amount of religious behavior while the present study measured frequency in times per year. Therefore, the present sample will be compared with other studies in terms of differences found in the amount of religious behavior exhibited.

These results suggested that females participated in religious activities significantly more than males. Other studies have also shown this to be true. D. R. Thomas (1975) utilized an activity scale which had categories ranging from at least once a week to never, and found that females in his college sample were more active in church-related activities than males. Mol (1970) used a scale which ranged from once a month to seldom or never, and he reported the same findings as Thomas.

As with religious attitudes, it appears that, regardless of the exact measure of religious behavior, females are more active in church-related activities than males. This finding was not unexpected, and although the above studies do not explain this effect, it is suggested that it can be explained in the same manner as the religious attitude differences. Traditional sex-roles have led to a society dominated by males, and females have had their roles defined for them in such a way as to make them more religious. They have been told that they are to be religious, and they usually accept that fact. This tradition is then perpetuated through the process of modelling, with mothers teaching their daughters to be religious, both in terms of attitudes and behavior.

Sexual attitudes. It was possible to compare the sexual attitudes of the present sample with the sexual attitudes that Reiss (1967, p. 26)

obtained with his sample in order to determine whether or not the present sample was similar to his. Table 15 shows the number and percentage of participants in the present sample and in Reiss' sample of two white colleges who reported the five sexual attitudes. The table is divided according to sex. As can be seen, the same pattern is found for both males and females in the present sample when they are compared with Reiss' sample. A smaller percentage of participants in the present sample agreed with the abstinence standard, orthodox double-standard, and transitional double-standard than in Reiss' sample. Also, a larger percentage of participants in the present sample agreed with the two permissiveness standards. Overall, the largest differences between the present results and those of Reiss occur with the two permissiveness standards.

The percentages in Table 15 appear to indicate that the present sample, especially the females, was more liberal than Reiss' sample. These apparent differences are probably a function of the time period in which the two samples were tested. Reiss sampled students almost 15 years ago, and it seems reasonable to expect continued changes in a liberal direction. Social changes with regard to sexual attitudes have been evident in the past few years (Callahan, 1971, p. 219), and consequently, both male and female attitudes toward premarital sexuality have appeared to change.

It was also possible to compare the present sample with others in terms of differences found in sexual attitudes. The present results indicated that Urban males were significantly more liberal in their attitudes than Appalachian males, Appalachian females, or Urban females.

Table 15

Comparison of Present Sample with Reiss' Sample on Sexual Attitudes

Attitude by Sex	Present Sample n	Present Sample %	Reiss' Sample n	Reiss' Sample %
Males				
1	34	(24.6)	61	(31.6)
2	9	(6.5)	20	(10.4)
3	37	(26.8)	46	(23.8)
4	9	(6.5)	39	(20.2)
5	49	(35.5)	27	(14.0)
N	138		193	
Females				
1	58	(28.0)	132	(57.1)
2	9	(4.3)	30	(13.0)
3	84	(40.6)	34	(14.7)
4	8	(3.9)	29	(12.6)
5	48	(23.2)	6	(2.6)
N	207		231	
Total				
1	92	(26.7)	193	(45.5)
2	18	(5.2)	50	(11.8)
3	121	(35.1)	80	(18.9)
4	17	(4.9)	68	(16.0)
5	97	(28.1)	33	(7.8)
N	345		424	

Note. The numbers one through five represent the five categories designated as sexual attitudes. The five attitudes are: 1) Abstinence, 2) Orthodox double-standard, 3) Permissiveness with affection, 4) Transitional double-standard, and 5) Permissiveness without affection.

The more liberal sexual attitudes of the Urban males could be explained more easily if the Appalachian males had also reported significantly more liberal sexual attitudes. However, the Appalachian males' sexual attitudes were very similar to both groups of females.

Many researchers have found that males have significantly more liberal sexual attitudes than females (Alston, 1974; Clouse, 1973; Kinsey, 1947, 1953; Lindenfeld, 1960; Middendorp et. al., 1970; Mol, 1970; Reiss, 1967; Sutker et. al., 1970; Wright & Cox, 1967), but no research has been found that explains why Urban males would have more liberal sexual attitudes than Appalachian males. It appears reasonable to attempt an explanation of this in terms of the different cultures the two groups of males represent. Appalachia appears to be a very restrictive culture. It is conservative, and appearances are very important. In other words, it is acceptable to engage in certain behaviors, but only to do so covertly because appearances must coincide with cultural expectations. When actual sexual behavior is considered, this line of reasoning holds true because there were no differences in actual sexual behavior between Appalachian and Urban males. It would appear that, for the Urban male, a more open approach to sexuality is permitted. If a male engages in sexual activity, then he is also allowed to adopt the liberal attitude that accompanies the behavior. Reiss' (1967) Proposition Two may help clarify this further. Reiss states that "the stronger the amount of general liberality in a group, the greater the likelihood that social forces will maintain high levels of sexual permissiveness" (p. 161). Reiss is referring to sexual attitudes when he talks about permissiveness. If his proposition is valid, it

would appear that Appalachian males, who come from a culture which has less general liberality in all matters, would be less likely to have liberal sexual attitudes. The converse would be true for Urban males. In terms of sexual behavior, however, Appalachian males are probably responding to stimuli other than that which is accepted by the Appalachian culture. This might include both biological drives and peer expectations.

Both Appalachian and Urban females were significantly less liberal in sexual attitudes than Urban males. In this case, it would be reasonable to conclude that the same forces are at work as were at work with regard to religious attitudes and behavior. Due to traditional sex-roles and modelling, females were less likely to endorse a liberal sexual attitude than males in general, and Urban males in particular. It would seem that, in the case of sexual attitudes, Appalachian males have been culturally conditioned in much the same way as females.

It might also be noted that one researcher (Ruppel, 1970) found no differences between college males and females in terms of sexual attitudes, and used the same scale that was utilized in the present study. However, Ruppel gives no explanation for his finding.

Sexual behavior. Most researchers have used whether or not one has engaged in full sexual relations as the primary indicator of sexual behavior (Christensen & Carpenter, 1962; Lindenfeld, 1960; Reiss, 1967; Sutker et. al., 1970; L. Thomas, 1973; D. R. Thomas, 1975), while the present study utilized a combination of type of sexual behavior and frequency of sexual behavior as the primary indicator. However, it was possible to compare the present sample with other samples in terms of

the percentage of participants who had engaged in full sexual relations. Lindenfeld (1960) reported that 43.0% of the males and 15.0% of the females in his college sample had engaged in full sexual relations. Lena Thomas (1973) reported that 65.0% of the males and 50.0% of the females in her college sample had engaged in full sexual relations. D. R. Thomas (1975), in his college sample, found that 45.0% of the males and 27.0% of the females had engaged in full sexual relations. The findings of the present study indicated that 72.0% of the males and 64.3% of the females had engaged in full sexual relations. These percentages appear to be higher than those reported by other reseachers, but it must be remembered that three types of sexual behavior were defined as full sexual relations in the present study. It is assumed that most other studies defined full sexual relations as vaginal intercourse, while in the present study, full sexual relations were defined as vaginal, oral, or anal intercourse. If only the percentages of males and females who had engaged in vaginal intercourse are considered, the percentages decrease somewhat with 67.4% of the males and 60.4% of the females reporting having experienced vaginal intercourse. Although these percentages are still higher than the percentages in other studies, it is suggested that, as with sexual attitudes, this is probably a function of social change. Changes have occurred with regard to sexual behavior which have made premarital sexual behavior more acceptable, and as a result, it appears that more people are engaging in sexual behavior, and this pertains to females in particular.

In comparing the present sample with others in terms of differences found in sexual behavior, it was found that the present sample showed no

significant differences due to the sex of the participant, while most other studies have found differences (Christensen & Carpenter, 1962; Lindenfeld, 1960; Reiss, 1967; Sutker et. al., 1970; D. R. Thomas, 1975).

Reiss explains this difference in terms of his Proposition One which states that "the lower the traditional level of sexual permissiveness in a group, the greater the likelihood that social forces will alter individual levels of sexual permissiveness" (p. 160). So, it appears that females, who traditionally have lower levels of sexual permissiveness, should be very sensitive to social forces such as church attendance and parental values that would curb their permissiveness. Reiss' proposition was not supported in the present study.

There are probably several reasons for the discrepancy between the present findings and the findings of others. First, the measure of sexual behavior utilized in the present study was different from the measures used in others, and although more males had engaged in full sexual relations, females who engaged did so more frequently than males. It is suggested that the reason for this greater frequency on the part of females is due to the fact that females may be more apt to have sexual relations on a regular basis in a long-term relationship whereas males may have more casual sexual encounters on an irregular basis.

Another explanation may be that females are just more sexually active today than they were when the other studies were done. This is probably due to the increased acceptance of premarital sexual activity in American society.

It may also be noted that one other researcher (L. Thomas, 1973),

found no significant difference between males and females in terms of sexual behavior. Thomas gives no explanation for this finding.

In viewing the four major variables together, it can be seen that the finding of no difference between males and females in terms of sexual behavior is inconsistent with the findings for religious attitudes and behavior, and sexual attitudes. The differences between males and females have been explained in terms of traditional sex-role orientation and modelling. However, the question may be raised as to how this final finding can be explained without rejecting the explanation of the others. It appears that females are not accepting their traditional roles with regard to sexual behavior.

It is suggested that, with regard to religious attitudes and behavior, the family is the most important factor which contributes to adult attitudes and behavior. Females from religious homes are instilled with religious attitudes and behavior from birth, and the female becomes very firm in that role. In terms of sexual behavior, however, it is thought that peers are more important than family in defining adult behavior. Reiss (1967) states that "there is a general tendency for the individual to perceive his parents' permissiveness as a low point on a permissive continuum and his peers' permissiveness as a high point, and to place himself closer to his peers, particularly to those he regards as his close friends" (p. 163). Also, sexual matters are not instilled in children from birth. The process of sex education, if it occurs in the home, begins at a later date than religious education. So, while religious attitudes are learned from the family from birth, sexual

sexual attitudes are, more often than not, learned outside the home, and at a later date. This probably contributes to the fact that no differences were ascertained between males and females in terms of sexual behavior.

There are three other possible contributors. First, females have biological drives which encourage the release of sexual frustration, and second, changes in attitudes toward premarital sexual behavior have made it more acceptable for the female to engage in premarital sexual relations. A third contributor may be the advent of relatively safe, easy methods of birth control.

If the above statements are valid explantions, then it may be asked why females in the present sample had more conservative sexual attitudes than Urban males? It is conceivable that this is due to the same phenomenon that was at work with the Appalachian males in terms of sexual attitudes. The females in the present study may have felt they could engage in any type of behavior they wanted, but to do so openly was unacceptable. So, to the degree that sexual attitudes are expressed openly, they have kept their culturally conditioned views. However, these views did not carry over into actual sexual behavior.

Several hypotheses will now be considered which examine interactions between the four major variables. The effects of several contributing factors on the interactions will also be discussed.

Hypothesis One

Hypothesis 1, which dealt with specific relationships among religious attitudes, religious behavior, sexual attitudes, and sexual behavior, will now be discussed. Each hypothesis will be presented individually.

Hypothesis 1A. This hypothesis stated that religious attitudes would predict sexual attitudes better than religious attitudes would predict sexual behavior. It has been suggested (King et. al., 1976) that attitudes would more accurately predict attitudes than they would predict behavior, and the findings of the present study support that claim. It is possible to determine why this relationship exists when the previous differences between males and females are viewed in terms of consistency. In the relationship between religious attitudes and sexual attitudes, differences between the sexes were consistent. That is, females were more religious in their attitudes than males and less liberal in their sexual attitudes than males. The consistency in male-female differences in religious attitudes and sexual attitudes would seem to contribute to a greater overall correlation between religious attitudes and sexual attitudes. However, there were no sex differences in sexual behavior. Thus, when sexual behavior was correlated with religious attitudes, the discrepancy in sex differences between these two variables, together with the comparison of an attitude with a behavior, resulted in a significantly smaller correlation than when religious attitudes were correlated with sexual attitudes. It appears that attitudes, in both the religious and sexual realms, tend to be congruent with upbringing, i.e. traditional roles, but sexual behavior, in the case of females, is not congruent.

Hypothesis 1B. King et. al., (1976) also suggested that behavior would more accurately predict behavior than it would predict attitudes. The finding that religious behavior predicted sexual behavior and attitudes equally well disagrees with King's et. al. (1976) hypothesis. Again,

it is possible to see why this relationship exists when the previous male-female differences are viewed in terms of consistency. The relationship between religious behavior and sexual behavior was inconsistent in the sense that there were male-female differences in terms of religious behavior, but there were no male-female differences in terms of sexual behavior. This discrepancy due to sex of the participant would tend to decrease the magnitude of the overall correlation between religious behavior and sexual behavior. In the relationship between religious behavior and sexual attitudes, there were no inconsistencies due to sex of the participant because in both cases, there were male-female differences in the expected directions. Thus, although a smaller correlation might be expected between a behavior and an attitude, this was compensated, in part, by the consistency of the sex differences found with religious behavior and sexual attitudes. The suspected reasons for this incongruency have already been discussed in terms of sex-roles, and will not be discussed again. However, in terms of the King et. al. (1976) suggestion, it appears that the consistency of the differences found for each of the individual variables, such as sex of the participant, will be paramount in determining whether or not the relationships will be true when using attitudes to predict attitudes and behavior to predict behavior.

Hypothesis 1C. Hypothesis 1C stated that sexual attitudes would not predict sexual behavior as well when the effects of religious attitudes and behavior were controlled. The present study found little evidence for this. This may be due to the fact that religious attitudes

and behavior had little effect on actual sexual behavior. Although the data from Hypotheses 1A and 1B showed that religious attitudes and behavior had an effect on sexual attitudes, the data also showed that religious attitudes and behavior had less effect on sexual behavior. Therefore, it would seem reasonable to conclude that the relationship between sexual attitudes and sexual behavior is independent of religious attitudes or religious behavior.

Hypothesis Two

Hypothesis 2, which stated that there would be significant differences between Appalachian and Urban participants in terms of religious attitudes and behavior and sexual attitudes and behavior was not confirmed. These findings are in accordance with most other researchers who have used place of residence as a variable (Hohman & Schaffner, 1947; Ruppel, 1970; Segal, 1974). Only one study has found significant differences due to place of residence (Middendorp et. al., 1970), and no explanation is given for this finding.

There are several possible reasons why there were no significant differences between the Appalachian and Urban groups. First, it may be that college students from Appalachia are not truly representative of Appalachia as a whole. It may be that college students from Appalachia represent upper-class families, and they may be less likely to hold traditional fundamental religious attitudes and behavior and conservative sexual attitudes and behavior. It could also be that college students are not representative of Appalachia as a whole because they have not lived in Appalachia all of their lives. Length of residence was not

controlled, and it may have been a confounding factor in the present results.

Another possible explanation may be found in viewing the Urban females' sexual attitude scores. The single significant difference in attitudes or behavior between the Appalachian and Urban groups was found in sexual attitudes, where Urban males were more permissive than either the Appalachian males or females. However, the Urban females were similar to the Appalachian males and females in sexual attitudes. Thus, the resulting overall correlations between sexual attitudes and religious attitudes, religious behavior, and sexual behavior were not significantly different.

The similarity between the Appalachian and Urban groups may also be a true reflection of a changing Appalachian culture. The advent of industry, development districts, television, and other proponents of change, may be having an effect on the Appalachian culture which is resulting in more liberal attitudes and behavior concerning religion and sexuality.

Hypothesis Three

Hypothesis 3 concerned the contributing factors of sex, double-standard, age, major, and fraternity or sorority membership. Each of these hypotheses will be discussed separately.

Hypothesis 3A. Hypothesis 3A, which stated that males would be more liberal than females in terms of sexual attitudes and behavior, was not confirmed. This finding was contrary to other researchers who have found differences in terms of sexual attitudes between males and females

(Alston, 1974; Clouse, 1973; Kinsey, 1948, 1953; Middendorp et. al., 1970; Mol, 1970; Reiss, 1967; Sutker et. al., 1970; Wright & Cox, 1967), and is also contrary to researchers who have found differences in sexual behavior between males and females (Christensen & Carpenter, 1962; Lindenfeld, 1960; Reiss, 1967; Sutker et. al., 1970; D. R. Thomas, 1975).

It is somewhat difficult to explain the lack of difference in sexual attitudes between males and females when it has been stated that Urban males were significantly more likely to have liberal sexual attitudes. However, there is a possible explanation. It may be that when Appalachian males were used in conjunction with Urban males, and the correlation with females and sexual attitudes was performed, the resulting relationship was less than might be expected had both groups of males been significantly more liberal in their sexual attitudes than females.

Hypothesis 3B. Although some participants in both the Appalachian and Urban groups reported a double-standard, there were no significant differences according to group. This is contrary to the hypothesis, and is also contrary to the findings of others (Lindenfeld, 1960; Reiss, 1967; Sutker et. al., 1970; D. R. Thomas, 1975).

Reiss (1967) deals with the double-standard in his Proposition Four which states that "the higher the overall level of permissiveness in a group, the greater the extent of equalitarianism within the abstinence and double-standard classifications" (p. 161). In other words, Reiss suggests that if one is a member of a group that is very high in permissiveness, then one is less likely to employ a double-standard. It will not be speculated as to whether or not the present sample was very

high in permissiveness. However, it has been shown in Hypothesis 2 that the two groups within the sample were very similar in degree of permissiveness. Therefore it would seem that, to the extent that the two groups endorse high levels of permissiveness and are similar to each other, Reiss' proposition is valid, and it would follow that there would be no differences in terms of a double-standard.

Hypothesis 3C. The finding that there were no significant differences in terms of sexual attitudes and behavior as a function of age was contrary to the hypothesis, and was also contrary to the findings of others. However, two of the researchers who found age differences (Mol, 1970; Middendorp et. al., 1970) used age ranges from 20 - unspecified and 17 to 70, respectively. This large age range possibly accounts for their significant differences.

The present study had an age range from 18 - 25. However, other researchers who have used similar age ranges have found significant differences in sexual attitudes and behavior (Ruppel, 1970; Segal, 1974; L. Thomas, 1973). Only one study (Wright & Cox, 1967) found no significant differences as a function of age, and the age range was from 16 - 18.

The reason for the lack of an age effect is unclear. It may be, however, a function of social change. Each year more liberal sexual attitudes and behavior appear to pervade society, and it seems that as this happens, young people acquire liberal sexual attitudes and behavior at earlier ages.

Hypothesis 3D. The finding that there were no differences due to

the school within the University in which one had his or her major field of study confirmed the hypothesis and also corroborates the findings of other researchers (Segal, 1974; L. Thomas, 1973). This indicates that participants who held different religious attitudes and behavior and sexual attitudes and behavior could be found in each school within the University. It would seem reasonable to conclude that this is probably due to the large numbers and vast diversity of people who now attend college, and it is also probably a function of social change. People can choose their field of study because they enjoy it; they do not worry about whether or not the field is usually filled with liberal people or vice versa.

It is also possible that the differences in attitudes and behavior within schools at the University are so diverse that differences between schools were masked. This would be a result of the diversity of major fields of study categorized into one school.

Hypotheses 3E & 3F. The findings of hypotheses 3E and 3F indicated that there were no differences in terms of religious attitudes and behavior and sexual attitudes and behavior as a function of fraternity or sorority membership. With regard to fraternity membership, this was contrary to the hypothesis, and was also contrary to the findings of others (Segal, 1974; Schulz et. al., 1977). A possible explanation may be found in terms of the general liberality of the males in the present study. It would appear that the males were liberal, and regardless of fraternity membership, they were likely to employ liberal sexual attitudes and engage in sexual behavior. In the present sample,

Appalachian males were more conservative than Urban males, but Appalachian males were also more likely to be members of a fraternity than Urban males. These factors may have cancelled out any tendency for greater liberality among fraternity vs. non-fraternity members.

For the sorority members, there were no differences in terms of the four major variables when compared with non-sorority members, and this confirmed the hypothesis and also corroborates the findings of other researchers (Segal, 1974; Schulz et. al., 1977). Neither of these researchers gives an explanation for their findings, but it is not surprising that since there have been no differences between females thus far, there would be no differences in terms of sorority vs. non-sorority membership.

Implications of the Present Study

Several of the findings of the present study were unexpected, and the major findings should be summarized once again. The only unexpected result between males and females was the finding of no differences in terms of sexual behavior. Before accepting this as valid, it must be remembered that this is only one college sample, and it may not be representative of other colleges, or of young people in general. However, several possible explanations were proposed which might account for this lack of differences. It is suggested that the best general explanation would be a combination of two factors mentioned. First, the concept of peer expectations, and second, if peer expectations are coupled with the apparent social changes, the resulting behavior would be more liberal. Of course, this would apply only to the extent that peer

expectations are liberal. Whatever the primary reasons for this liberality on the part of females in the present study, it would appear that more research needs to be done in order to determine whether or not these findings were valid.

In terms of differences between the Appalachian and Urban groups, only one significant difference was ascertained, and this particular difference was unexpected. The present results indicated that there was a significant difference between Appalachian and Urban males in terms of sexual attitudes with Urban males being significantly more liberal than Appalachian males. An explanation was suggested for this in terms of cultural differences, but the question may be raised as to why Urban females were not also significantly more liberal in their sexual attitudes than Appalachian females.

It is suggested that the Appalachian culture does not strive to suppress its females' sexual attitudes to a greater degree than they are already suppressed by American society as a whole, whereas for males, it is necessary to suppress liberal sexual attitudes because American society does not do this to a great extent. On the other hand, Urban males are a product of American society and their attitudes are congruent with it, and Urban females are also the product of American society, and their conservative sexual attitudes are also congruent with it because females are supposed to be less sexually liberal. Through this cultural repression of Appalachian males' attitudes, Appalachian males became similar to females in general in their sexual attitudes.

The lack of any other differences between the Appalachian and Urban

groups was surprising, but several possible explanations have been suggested. It is possible, however, that there are other explanations. It is conceivable that after young people go to college and are exposed to the attitudes and behavior of other young people who have different attitudes and behavior, the differences which may have existed tend to disappear. If this is true, it is a valid reason to accept the tenet that college is a change agent in American society. If young people leave home and go to college, they are probably more likely to adopt attitudes and behavior that others around them display.

One other explanation may be that people have stereotyped Appalachia as a conservative, backward culture, when in fact, it is not, at least in terms of the rest of the state of Kentucky. These possibilities lead to suggestions for future research in this area.

There are several ways in which research should be conducted. First, it might be advised to utilize Appalachian and Urban populations that are younger than college-aged. In this way, any differences could be ascertained before the two groups influence each other. It might also be well to utilize Appalachian and Urban populations that are college-aged, and yet not attending college. This would validate or invalidate the results of the present study in terms of Appalachia as a whole.

Another interesting area of research could be found in examining Appalachian college students in conjunction with the same aged Appalachian non-college students. This would give some indication of the validity of college as a change agent in the Appalachian population. In all of the above cases, it would be appropriate to control the variables of

length of residence and socioeconomic status in order to eliminate any differences that these variables might produce.

From the above it can be seen that this study has asked more questions than it has answered. It is therefore recommended that other researchers in the area take into consideration the present suggestions and conduct their research in a manner which will provide added evidence for valid conclusions.

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APPENDIX A

QUESTIONNAIRE AND CONSENT FORM

Lifestyles Questionnaire
Spring 1980

602 East Mignon
Morehead, KY 40351
783-4184

Dear Participant:

As you will recall, the enclosed questionnaire has been discussed with you at an earlier time. You expressed interest in completing the questionnaire and indicated that you were willing to fill it out. Also enclosed is a consent form which you need to sign and date, and you also need a witness to sign and date it. This is to ensure your rights as a participant as well as my rights as the investigator. The consent form needs to be returned to me. You will notice that two self-addressed envelopes are included so that you may return the consent form and questionnaire separately. This is to ensure your privacy. All you have to do is drop them into the post office box in the University post office in ADUC. As was mentioned earlier, it would be a great help to me if you could complete the questionnaire and return it as soon as possible.

Let me take a moment to assure you once again of the confidentiality that will be given to your answers. No one will see the questionnaires except me, and your name will not appear on the questionnaire. As you can see there is a serial number on the questionnaire, but this is only for the purpose of knowing what questionnaires have been returned. Also, since you have the right to withdraw consent at any time, I will need a way to get the correct data if you should decide to do so. Your questionnaire will be kept under lock and key until I record the data, and then the questionnaire will be destroyed. There are over 500 other people who will be participating in the study, and all answers given will be put together. No individual questionnaires will be used. I hope this knowledge will enable you to feel free to answer the questions as candidly and completely as possible.

I believe that I should also say some things about the questionnaire itself. The questionnaire is intended for a wide variety of people, both conservative and liberal, but in no way is it intended to offend anyone. The subject of human sexuality is a delicate one, and I have tried to treat it as such. However, in order to ensure that everyone answers the questions with the same definitions in mind, certain terms have been explicitly defined.

Thank you so much for your willingness to be a part of this study. I appreciate your help. If I can be of assistance to you in completing

the questionnaire, please feel free to call me. Also, if you decide that you cannot complete the questionnaire, please call me and tell me so that I can obtain another participant.

Sincerely,

Kim McClanahan

Kim McClanahan

Lifestyles Questionnaire

This questionnaire is to be answered anonymously. Please do not write your name or any other identifying mark on the questionnaire. The answers you give are for research purposes only, and they will be "pooled" together with over 800 other questionnaires. Please try to answer the questions as candidly and completely as possible. You can do so with confidence because answers cannot be traced to you personally. However, some information about your sex, age, and items of general information will be needed. Without this information the research could not be carried out. Please answer the following questions by checking the appropriate space or writing in the answer.

I. ____Male
____Female

____Freshman
____Sophomore
____Junior
____Senior

____Age

Of what county are you a resident? _____

How long have you lived there? _____

What is the approximate size of the place in which you have lived the longest?

____Farm
____Less than 1000 people
____1000 to 5000 people
____5001 to 10000 people
____10001 to 20000 people
____20001 to 30000 people
____30001 to 40000 people
____40001 to 50000 people
____50001 to 60000 people
____Over 60000 people

While at MSU, do you live:

____in the dorm
____off-campus with parents
____off-campus without parents

Lifestyles Questionnaire

What is your major field of study? _____

Are you a member of a fraternity or sorority?

____Yes
____No

Do you consider yourself to be:

____Heterosexual
____Bisexual
____Homosexual
____Asexual

II. The questions in Section II concern some attitudes of yours regarding courtship behavior. It is realized that you may be tolerant of what others do and think, but that is not of interest now. I am interested in your own personal views about the questions that are asked. These questions do not concern what you do-- they concern what you believe about courtship. On this sheet please circle the degree of agreement or disagreement that you have concerning each statement. Just answer these statements on the basis of how you feel toward the view expressed. Your name will never be connected with these answers, so please be as candid as you can. Several terms are defined so that everyone answering the questionnaire will be answering with the same concepts of the terms. Please answer the questions with these definitions in mind whether or not you agree with them.

Love means the emotional state which is more intense than strong affection and which you would define as love.

Strong affection means affection which is stronger than physical attraction, average fondness, or "liking," but less strong than love.

Petting means sexually stimulating behavior more intimate than kissing and simple hugging, but not including full sexual relations or self-stimulation.

Full sexual relations means vaginal intercourse, oral-genital intercourse, and/or anal intercourse. This may include one or more of these behaviors.

The following 12 questions concern your attitudes toward male behavior.

Lifestyles Questionnaire

1. I believe that kissing is acceptable for the male before marriage when he is engaged to be married.

   Agree: 1) Strong, 2) Medium, 3) Slight
   Disagree: 1) Strong, 2) Medium, 3) Slight

2. I believe that kissing is acceptable for the male before marriage when he is in love.

   Agree: 1) Strong, 2) Medium, 3) Slight
   Disagree: 1) Strong, 2) Medium, 3) Slight

3. I believe that kissing is acceptable for the male before marriage when he feels strong affection for his partner.

   Agree: 1) Strong, 2) Medium, 3) Slight
   Disagree: 1) Strong, 2) Medium, 3) Slight

4. I believe that kissing is acceptable for the male before marriage even if he does not feel particularly affectionate toward his partner.

   Agree: 1) Strong, 2) Medium, 3) Slight
   Disagree: 1) Strong, 2) Medium, 3) Slight

5. I believe that petting is acceptable for the male before marriage when he is engaged to be married.

   Agree: 1) Strong, 2) Medium, 3) Slight
   Disagree: 1) Strong, 2) Medium, 3) Slight

6. I believe that petting is acceptable for the male before marriage when he is in love.

   Agree: 1) Strong, 2) Medium, 3) Slight
   Disagree: 1) Strong, 2) Medium, 3) Slight

7. I believe that petting is acceptable for the male before marriage when he feels strong affection for his partner.

   Agree: 1) Strong, 2) Medium, 3) Slight
   Disagree: 1) Strong, 2) Medium, 3) Slight

8. I believe that petting is acceptable for the male before marriage even if he does not feel particularly affectionate toward his partner.

Lifestyles Questionnaire

Agree: 1) Strong, 2) Medium, 3) Slight
Disagree: 1) Strong, 2) Medium, 3) Slight

9. I believe that full sexual relations are acceptable for the male before marriage when he is engaged to be married.

Agree: 1) Strong, 2) Medium, 3) Slight
Disagree: 1) Strong, 2) Medium, 3) Slight

10. I believe that full sexual relations are acceptable for the male before marriage when he is in love.

Agree: 1) Strong, 2) Medium, 3) Slight
Disagree: 1) Strong, 2) Medium, 3) Slight

11. I believe that full sexual relations are acceptable for the male before marriage when he feels strong affection for his partner.

Agree: 1) Strong, 2) Medium, 3) Slight
Disagree: 1) Strong, 2) Medium, 3) Slight

12. I believe that full sexual relations are acceptable for the male before marriage even if he does not feel particularly affectionate toward his partner.

Agree: 1) Strong, 2) Medium, 3) Slight
Disagree: 1) Strong, 2) Medium, 3) Slight

The next 12 questions concern your attitudes about <u>female</u> behavior.

13. I believe that kissing is acceptable for the female before marriage when she is engaged to be married.

Agree: 1) Strong, 2) Medium, 3) Slight
Disagree: 1) Strong, 2) Medium, 3) Slight

14. I believe that kissing is acceptable for the female before marriage when she is in love.

Agree: 1) Strong, 2) Medium, 3) Slight
Disagree: 1) Strong, 2) Medium, 3) Slight

15. I believe that kissing is acceptable for the female before marriage when she feels strong affection for her partner.

Lifestyles Questionnaire

Agree: 1) Strong, 2) Medium, 3) Slight
Disagree: 1) Strong, 2) Medium, 3) Slight

16. I believe that kissing is acceptable for the female before marriage even if she does not feel particularly affectionate toward her partner.

Agree: 1) Strong, 2) Medium, 3) Slight
Disagree: 1) Strong, 2) Medium, 3) Slight

17. I believe that petting is acceptable for the female before marriage when she is engaged to be married.

Agree: 1) Strong, 2) Medium, 3) Slight
Disagree: 1) Strong, 2) Medium, 3) Slight

18. I believe that petting is acceptable for the female before marriage when she is in love.

Agree: 1) Strong, 2) Medium, 3) Slight
Disagree: 1) Strong, 2) Medium, 3) Slight

19. I believe that petting is acceptable for the female before marriage when she feels strong affection for her partner.

Agree: 1) Strong, 2) Medium, 3) Slight
Disagree: 1) Strong, 2) Medium, 3) Slight

20. I believe that petting is acceptable for the female before marriage even if she does not feel particularly affectionate toward her partner.

Agree: 1) Strong, 2) Medium, 3) Slight
Disagree: 1) Strong, 2) Medium, 3) Slight

21. I believe that full sexual relations are acceptable for the female before marriage when she is engaged to be married.

Agree: 1) Strong, 2) Medium, 3) Slight
Disagree: 1) Strong, 2) Medium, 3) Slight

22. I believe that full sexual relations are acceptable for the female before marriage when she is in love.

Agree: 1) Strong, 2) Medium, 3) Slight
Disagree: 1) Strong, 2) Medium, 3) Slight

Lifestyles Questionnaire

23. I believe that full sexual relations are acceptable for the female before marriage when she feels strong affection for her partner.

    Agree: 1) Strong, 2) Medium, 3) Slight
    Disagree: 1) Strong, 2) Medium, 3) Slight

24. I believe that full sexual relations are acceptable for the female before marriage even if she does not feel particularly affectionate toward her partner.

    Agree: 1) Strong, 2) Medium, 3) Slight
    Disagree: 1) Strong, 2) Medium, 3) Slight

III. The following questions concern your sexual behavior. I am only interested in behavior in which you were a willing participant.

1. Have you ever had a full sexual relation as defined in Section II? (If you answer no, go to question 9 of this section)

    ____Yes
    ____No

2. If yes, check the types of behavior you have experienced. (Check all that apply)

    ____Vaginal intercourse
    ____Oral-genital intercourse
    ____Anal intercourse

3. Do you think that you have a good understanding of the definitions of the terms used in question 2?

    ____Yes
    ____No

4. If you have experienced more than one of the above, which did you prefer?

    ____Have not experienced more than one
    ____Vaginal intercourse
    ____Oral-genital intercourse
    ____Anal intercourse
    ____No preference

Lifestyles Questionnaire

5. At what age did you first have sexual relations?

____

6. Have your full sexual relationships involved: (Check all that apply)

____Fiance or Fiancee
____Steady date
____Close friend
____Casual acquaintance
____Someone you've met for the first time

8. Since your first experience, how often have you had full sexual relations? (On an average)

____More than once a week
____Once a week
____2-3 times a month
____6-10 times a year
____1-5 times a year
____Never

9. If you have never engaged in a full sexual relationship as defined previously, what do you feel is the primary reason? (Check only one)

____Fear of pregnancy
____Fear of parental disapproval
____Fear of venereal disease
____Religious reasons
____Personal beliefs other than religious
____Lack of opportunity
____Have not found an acceptable partner
____Other (Please specify) _____

IV. The questions in Section IV deal with various types of religious ideas and social opinions. I am interested in finding out how common they are. Please indicate the response you prefer, or most closely agree with, by circling the letter corresponding to your choice. If none of the choices expresses exactly how you feel, then indicate the one which is closest to your own views. If no choice is possible you may omit the item. There are no "right" or "wrong" choices. There will be many religious people who will agree with all the possible alternative answers.

Lifestyles Questionnaire

1. What religion offers me most is comfort when sorrows and misfortune strike.

   a. I definitely disagree
   b. I tend to disagree
   c. I tend to agree
   d. I definitely agree

2. I try hard to carry my religion over into all my other dealings in life.

   a. I definitely disagree
   b. I tend to disagree
   c. I tend to agree
   d. I definitely agree

3. My religious beliefs are what really lie behind my whole approach to life.

   a. I definitely disagree
   b. I tend to disagree
   c. I tend to agree
   d. I definitely agree

4. One reason for my being a church member is that such membership helps to establish a person in the community.

   a. I definitely disagree
   b. I tend to disagree
   c. I tend to agree
   d. I definitely agree

5. The purpose of prayer is to secure a happy and peaceful life.

   a. I definitely disagree
   b. I tend to disagree
   c. I tend to agree
   d. I definitely agree

6. If not prevented by unavoidable circumstances, I attend church:

   a. More than once a week
   b. About once a week
   c. Two or three times a month
   d. Less than once a month

Lifestyles Questionnaire

7. The church is most important as a place to formulate good social relationships.

   a. I definitely disagree
   b. I tend to disagree
   c. I tend to agree
   d. I definitely agree

8. The prayers I say when I am alone carry as much meaning and personal emotion as those said by me during services.

   a. Almost never
   b. Sometimes
   c. Usually
   d. Almost always

9. I read literature about my faith (church).

   a. Frequently
   b. Occasionally
   c. Rarely
   d. Never

10. The primary purpose of prayer is to gain relief and protection.

    a. I definitely agree
    b. I tend to agree
    c. I tend to disagree
    d. I definitely disagree

11. It is important to me to spend periods of time in private religious thought and meditation.

    a. Frequently true
    b. Occasionally true
    c. Rarely true
    d. Never true

12. Religion helps to keep my life balanced and steady in exactly the same way as my citizenship, friendships, and other memberships do.

    a. I definitely agree
    b. I tend to agree
    c. I tend to disagree
    d. I definitely disagree

Lifestyles Questionnaire

V. The questions in Section V concern your religious behavior. Please check the appropriate places or write in your answer.

1. How often are you involved in organized religious activities? (This does not include your personal devotions and prayer life or events such as weddings and funerals)

____More than once a week
____Once a week
____2-3 times a month
____6-10 times a year
____1-5 times a year
____Never

2. What is your religious preference? That is, to what denomination do you belong, if any? _____

3. With regard to premarital sexual relations, would you say your church is:

____Very conservative
____Conservative
____Moderate
____Liberal
____Very liberal
____You don't know your church's feelings

4. Do you agree with your church in this regard?

____Strongly agree
____Agree
____Uncertain
____Disagree
____Strongly disagree

5. Do you consider yourself to be:

____Devout
____Moderately devout
____Inactive

VI. Please feel free to use this additional space for any comments you may want to make about the questionnaire. Once again let me thank you. Please place this questionnaire in one of the envelopes, sign the consent form and have a witness sign it, and place it in the other envelope and drop both into the post office box in ADUC. They are already addressed to me.

INFORMED CONSENT FORM

This is to certify that I, _____ (print),
hereby give permission for myself to participate as a volunteer in a research project as an authorized part of the educational and research program of Morehead State University under the supervision of Kim McClanahan.

This investigation and my part in the investigation have been defined and fully explained to me by Kim McClanahan or her male co-worker, and I understand the explanation. The procedures of this research project and their risks are described in the cover letter and have been discussed in detail with me over the phone.

I have been given the opportunity to ask whatever questions I may have had and all such questions and inquiries have been answered to my satisfaction.

I understand that I am free to deny any answer to specific items or questions in interviews or questionnaires.

I understand that any data or answers to questions will remain confidential with regard to the identity of the subject.

I certify that to the best of my knowledge and belief, I have no physical or mental illness or weakness that would cause risk to me during participation in this investigation.

I FURTHER UNDERSTAND THAT I AM FREE TO WITHDRAW CONSENT AND TERMINATE PARTICIPATION AT ANY TIME.

I hereby consent to participate as a subject in the research project described.

_____ _____
DATE Signature of Subject

I, the undersigned, have, in the Spring semester of the 1979-80 school year, defined and fully explained the investigation to the above subject.

Kim McClanahan
_____
Principal Investigator's Signature

I was present when the subject read the consent form and believe it was fully understood by him/her.

_____ _____
DATE Signature of Witness

APPENDIX B

PHONE CONVERSATION

Lifestyles Questionnaire Phone Conversation

Hello, is _____ _____ there? May I speak to her? Hello, my name is Kim McClanahan, and I'm a graduate student in psychology here at Morehead. (If the male assistant was calling a male participant, the male assistant said, "Hello, is _____ _____ there? May I speak to him? Hello, my name is Eric Dennison, and I'm calling for Kim McClanahan who is a graduate student in psychology." The remainder of the conversation was the same except for the use of personal pronouns). I'm doing a study that involves students from different counties in Kentucky, and you were selected at random to participate if you would like. I would like to tell you about the study if you have time. (If they said no, I asked them if I could call them later; if they still said no, I thanked them and did not call back). First of all, let me tell you that it will take no more than ½ hour of your time. Your participation would involve filling out a questionnaire about lifestyles. This specifically includes questions about religious attitudes and practices and sexual attitudes and practices. Before I go on, let me assure you of the confidentiality that will be given to your answers. I will be the only one who ever sees the questionnaire, and your name will not be on it. There will be a serial number on the questionnaire, but this is only there so that if you decide you do not want to participate after you've filled out the questionnaire, I can find your data again and destroy it. Also, there are over 500 other people who are filling this out, and all the data will be grouped together and will be recorded as numbers. No individual data will be used. As soon as your answers have been recorded, your questionnaire will be destroyed. Now, there will be a consent form which you will have to sign and date, and you also have to have a friend sign and date it. This is for the protection of both of us. What I'll do is send you two envelopes that will be addessed to me, and you can use one for the consent form and one for the questionnaire. Most people feel more comfortable with that arrangement. The consent form and questionnaire need to be dropped into the post office box in ADUC. Do you know where that is? (If not, I gave directions).

Do you have any questions concerning the study? (If the person had questions, they were answered honestly).

Would you be willing to participate? (If not, I thanked them for listening and said good-bye). If yes, then may I ask you a couple of questions? First of all, I'm using participants who are from 18-25 and that have never been married. Do you qualify? (If not, I apologized for wasting their time, and said good-bye). If so--You'll be getting a survey packet in your campus mailbox in a couple of days. (If the person lived off-campus, the survey packet was sent through the mail). You'd really help me out if you complete it and send it back to me in a couple of days. Will that give you enough time? (If not, I gave them a week). Thanks so much, _____. I really appreciate your time and effort.

APPENDIX C

LIST OF APPALACHIAN AND URBAN COUNTIES

Table 16

List of Appalachian and Urban Counties

Appalachian				Urban	
001	Adair	127	Lawrence	037	Campbell
011	Bath	129	Lee	067	Fayette
013	Bell	131	Leslie	111	Jefferson
019	Boyd	133	Letcher	117	Kenton
025	Breathitt	135	Lewis		
043	Carter	137	Lincoln		
045	Casey	145	Madison		
049	Clark	147	Magoffin		
051	Clay	153	Martin		
053	Clinton	159	McCreary		
057	Cumberland	165	Menifee		
063	Elliot	173	Montgomery		
065	Estill	175	Morgan		
069	Fleming	189	Owsley		
071	Floyd	193	Perry		
079	Garrard	195	Pike		
087	Green	197	Powell		
089	Greenup	199	Pulaski		
095	Harlan	203	Rockcastle		
109	Jackson	205	Rowan		
115	Johnson	207	Russell		
119	Knott	231	Wayne		
121	Knox	235	Whitley		
125	Laural	237	Wolfe		

Note. The numbers refer to the numerical code used for each county on the data cards.

APPENDIX D

CODEBOOK AND RAW DATA

CODEBOOK

Column	Variable Name and Code
1-3	Subject number
4	Sex 1 Male 2 Female
5	Academic classification 1 Freshman 2 Sophomore 3 Junior 4 Senior
6-7	Age
8-10	County of home residence (see Appendix C for numbers)
11-12	Length of residence in county in years
13-14	Size of town 01 Farm 02 Less than 1000 03 1000-5000 04 5001-10000 05 10001-20000 06 20001-30000 07 30001-40000 08 40001-50000 09 50001-60000 10 Over 60000
15	Place of college residence 1 Dormitory 2 Off-campus with parents 3 Off-campus without parents
16-17	Major (see page 121)
18	Fraternity or Sorority 1 Yes (male) 2 No (male) 3 Yes (female) 4 No (female)

Column	Variable Name and Code
19	Sexual preference 1 Heterosexual 2 Bisexual 3 Homosexual 4 Asexual
20	For MALES SPS Abstinence 1 Petting without affection 2 Petting with affection 3 Kissing without affection 4 Kissing with affection
21	Double standard 1 Orthodox 2 Transitional 3 None
22	Permissiveness without affection 0 No 1 Yes
23	Permissiveness with affection 0 No 1 Yes
24-27	These columns correspond to columns 20-23 for males. However, the information coded in columns 24-27 is for females.
28	Sexual intercourse 1 Yes 2 No
29	Vaginal 1 Yes 2 No
30	Oral 1 Yes 2 No
31	Anal 1 Yes 2 No

Column	Variable Name and Code
32	Do you understand definitions of vaginal, oral, and anal intercourse? 1 Yes 2 No
33	Which of those three do you prefer? 1 Have not experienced more than one 2 Vaginal 3 Oral 4 Anal 5 No preference
34-35	Age of first sexual experience in years
36-40	With whom have you had sexual intercourse?
36	Fiancee or Fiance
37	Steady date
38	Close friend
39	Casual aquaintance
40	Someone you've met for the first time 1 Yes 2 No
41	Sexual experience most often applies to: 1 Fiancee or Fiance 2 Steady date 3 Close friend 4 Casual aquaintance 5 Someone you've met for the first time
42	How often do you experience sexual intercourse? 1 More than once a week 2 Once a week 3 2-3 times a month 4 6-10 times a year 5 1-5 times a year 6 Never
43	If you have never engaged in sexual intercourse, why not? 1 Fear of pregnancy 2 Fear of parental disapproval 3 Fear of venereal disease 4 Religion 5 Personal beliefs (not religion) 6 Lack of opportunity 7 No acceptable partner 8 Other

Column	Variable Name and Code
44-55	These columns refer to the twelve Intrinsic/Extrinsic religious questions. A 3 is given if the participant did not answer. I and E refer to Intrinsic and Extrinsic, respectively.
44, 47, 48, 49, 50, 52, 54	Questions 1E, 4E, 5E, 6I, 7E, 9I, 11I 1 a 2 b 4 c 5 d
45, 46, 51, 53, 55	Questions 2I, 3I, 8I, 10E, 12E 5 a 4 b 2 c 1 d
56-57	Total Intrinsic score
58-59	Total Extrinsic score
60-61	Total combined Intrinsic/Extrinsic scores
62	How often are you involved in religious activities? 1 More than once a week 2 Once a week 3 2-3 times a month 4 6-10 times a year 5 1-5 times a year 6 Never
63	Religious preference 1 Catholic 2 Baptist 3 Christian 4 Methodist 5 None 6 Pentecostal 7 Presbyterian 8 Protestant 9 Other

Column	Variable Name and Code
64	With regard to sexual matters, is your church: 1 Very conservative 2 Conservative 3 Moderate 4 Liberal 5 Very liberal 6 Don't know
65	Do you agree with your church? 1 Strongly agree 2 Agree 3 Uncertain 4 Disagree 5 Strongly disagree
66	Are you: 1 Devout 2 Moderately devout 3 Inactive
67	Group 1 Appalachian 2 Urban
68-71	Factor scores for sexual behavior without Frequency
72-75	Factor scores for sexual behavior with Frequency added

LIST OF MAJORS

1. Psychology
2. Elementary Education
3. Business Administration
4. Industrial Technology
5. Social Work
6. Construction
7. Broadcasting
8. Art, Theatre
9. Applied Science and Technology
10. Philosophy
11. Biology
12. Industrial Arts
13. Geography
14. Industrial Education
15. Music Education
16. Corrections
17. Real Estate
18. History
19. Radiation Therapy
20. Geology
21. Agriculture
22. Chemistry
23. Electronic Technology
24. Data Processing
25. Journalism
26. Computer Science
27. Pre-Engineering
30. Government
31. Accounting
32. Music
33. Pre-Law
34. Drafting and Design
35. Photo Journalism
36. Undeclared
37. Pre-Medicine
38. Mining Technology
39. Communications
40. Math
41. Environmental Studies
42. Special Education
43. Welding
44. Recreation
45. Political Science
46. Economics
47. Medical Technology
48. Education
49. Pre-Forestry
50. Physical Education
51. Nursing
52. Marketing
53. Clothing and Textiles
54. University Studies
55. Physical Therapy
56. Food Service Administration
57. Home Economics
58. Elementary Education
59. Veterinary Technology
60. Fashion Merchandising
61. Secretarial Studies
62. English

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APPENDIX E

ANALYSIS OF VARIANCE SUMMARY TABLE FOR RELIGIOUS ATTITUDES, RELIGIOUS BEHAVIOR, AND SEXUAL BEHAVIOR

Table 17

Analysis of Variance Summary Table for Religious Attitudes, Religious Behavior, and Sexual Behavior

		Religious Attitudes		Religious Behavior		Sexual Behavior	
Source	df	MS	F	MS	F	MS	F
Sex (M vs. F)	1	240.62	5.93*	7315.95	6.12*	.95	.93
Group (A vs. U)	1	15.49	.38	240.54	.20	.01	.01
Sex x Group	1	19.54	.48	5.72	.01	.01	.01
Error	341	40.59		1196.34		1.02	

Note. M refers to male, F refers to female, A refers to Appalachian, and U refers to Urban.
*$p < .05$.

APPENDIX F

SIMPLE *tau* VALUES FOR MAJOR AS DEFINED BY HYPOTHESIS 3D

Table 18

Simple *tau* Values
for Hypothesis 3D

	School							
Simple *tau*	Undeclared	Applied Science	Business	Education	Humanities	Science/ Math	Social Sciences	Overall[a]
RA with RB	.45**	.33***	.38***	.40***	.37***	.28**	.34**	.34***
RA with SA	-.19	-.26***	-.26**	-.30**	-.22	-.21	-.38**	-.27***
RA with SB	-.17	-.11	-.11	-.31**	-.16	-.16	-.06	-.13***
RB with SA	-.39	-.40***	-.31***	-.22	-.28**	-.26	-.34**	-.34***
RB with SB	-.04	-.29***	-.16	-.40***	-.26**	-.19	-.27	-.23***
SA with SB	.31	.36***	.36***	.51***	.27	.50***	.24	.38***
N	20	87	70	39	47	45	37	345

Note. RA refers to religious attitude scores, RB refers to religious behavior scores, SA refers to sexual attitude scores, and SB refers to sexual behavior scores.

[a] Overall refers to the simple *taus* for the total sample.

**$p < .01$.

***$p < .001$.